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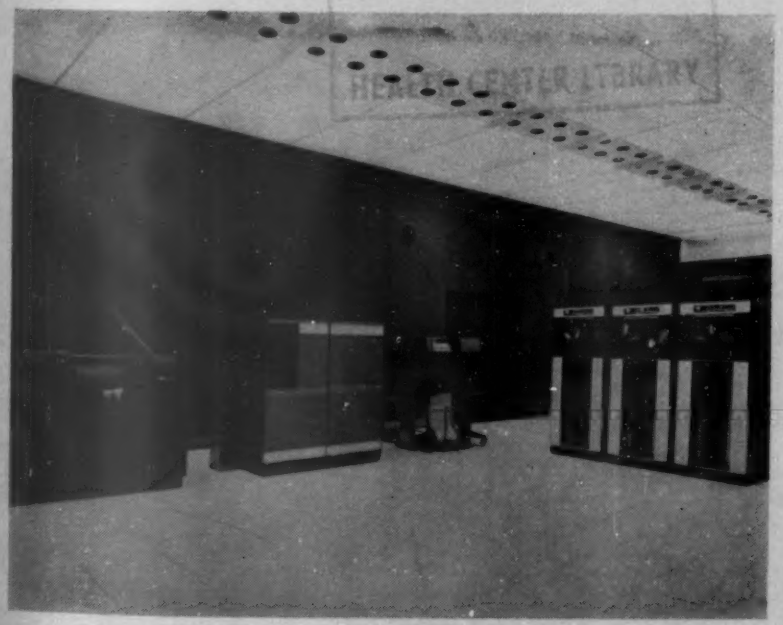

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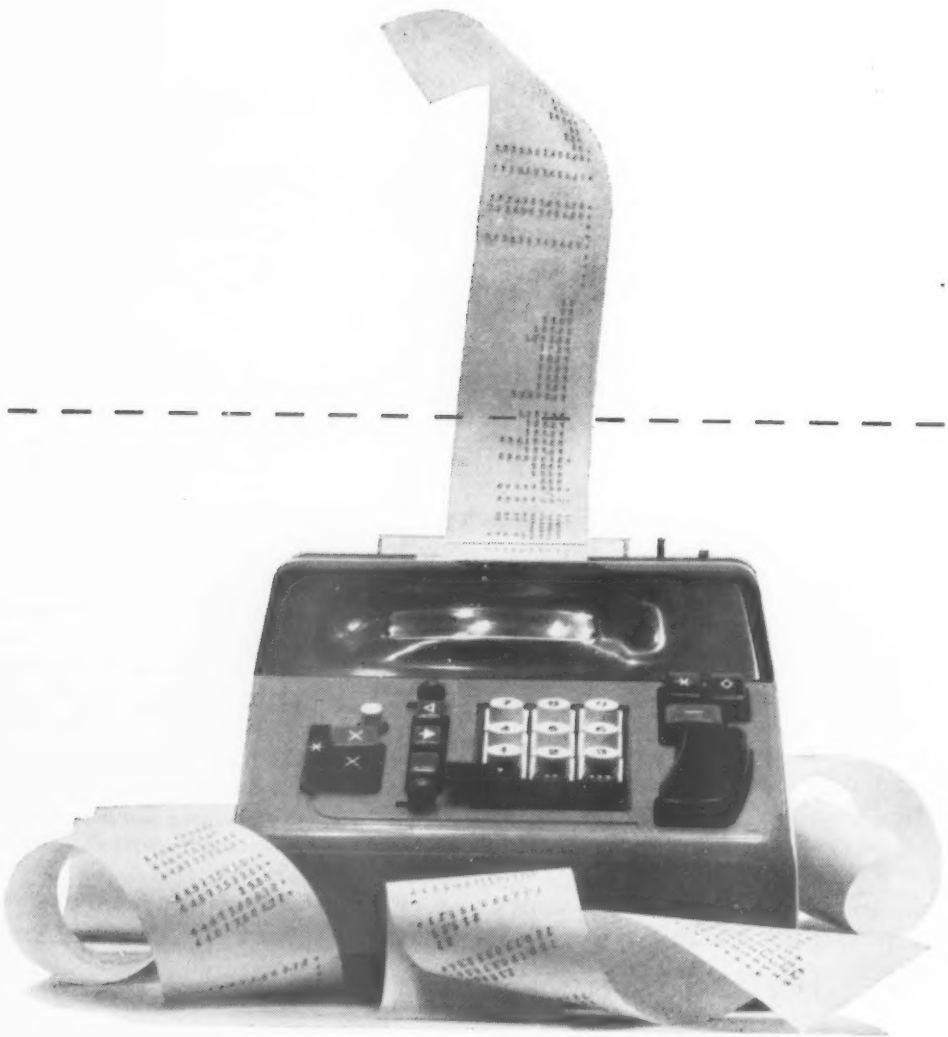

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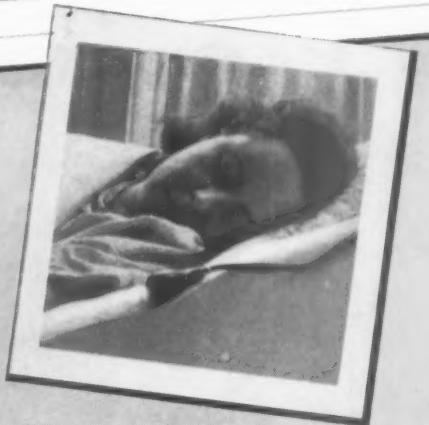

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Hospital Pharmacy Notes

No. 5 November/December/1961

by Dr. Glen J. Sperandio

Dr. Sperandio is associate professor of pharmacy at Purdue University, West Lafayette, Indiana, where he teaches dispensing and hospital pharmacy and also directs graduate research in the areas of clinical pharmacy and product formulation. He has had experience in the pharmaceutical industry and retail pharmacy as well as in hospitals, and, as editor of this series, he will discuss items of interest to the hospital pharmacist. Dr. Sperandio and Eli Lilly and Company invite your comments, suggestions, and contributions.

AUTOMATION IN PHARMACY

Earlier this year, an announcement was made of the availability of an automatic vending machine for dispensing pharmaceuticals used in the treatment of hospitalized patients. The system has been tried in hospital practice and has proved to be satisfactory. The machine contains an "electronic brain" which permits a nurse to have a medication order filled merely by following an established mechanical procedure and pushing a button. Basically, it is an automatic pharmacist. The implications of this unit and the effect it will have on the practice of pharmacy in future years should not be overlooked or taken lightly.

The manufacturer of the machine reports that it can control, both effectively and economically, the distribution of 90 percent of the drugs used in a large hospital. The only part the pharmacist plays in the system is that of filling the machine with prepackaged units of medication, properly identified. The "drug station," as it is called, is located at each nursing station and is stocked by the pharmacist at regular intervals.

After checking a patient's medication record, the nurse selects a metal plate, bearing the name of the drug prescribed, from a panel on the drug station. This plate, along with a similar one stamped with the patient's name, is then put into a shuttle slot in the machine. When the nurse presses an activator button, the desired medication, plus a label and a charge slip, is delivered to her.

Possibly, in the future, a court will have to decide whether or not a nurse who operates this machine is technically dispensing the medication. However, an automatic system for drug dispensing has already been established, and it probably will be only a matter of time until modifications of this process are extended into other areas where drugs are dispensed. In hospitals that adopt an automated system of drug distribution, the pharmacist can do one of two things. He can acknowledge that his profession is becoming a victim of the machine age and be content to service a vending machine, or he can re-evaluate his position in the hospital and place more and more emphasis on his activities as a specialist in supplying drug information to his medical colleagues. One thing that can never be obtained from mechanical agents is professional service—the human touch which gives scientific facts a real meaning. If electronic devices move into the pharmacy to perform some of the duties of the pharmacist, he should utilize the free time thus given him to acquire more medical and pharmaceutical information to function effectively as the physicians' consultant.

This insert is published as a service by Eli Lilly and Company, Indianapolis 6, Indiana.

AS OTHERS SEE THE PHARMACY

Step out into the corridor and view your pharmacy objectively. How does it look when you first approach it? What kind of impression does it make on you? Does it appear inviting from the outside and offer a promise of high-level pharmaceutical service, or does it convey the impression that you are operating a stock room or a check-out window for supplies?

Much has been said about the public image of pharmacy—and much more might justifiably be said. The pharmacy in the hospital should be the focal point for all who expect beneficial results from medication, and it should look as though it can live up to these expectations. The viewer, whether physician, nurse, or outpatient, should be able to see the pharmacy and readily identify it as an important department. In many instances, the hospital pharmacy has grown faster than other departments in the hospital; in some institutions, it has outgrown its physical boundaries but as yet has not been able to move to a different location because of the great shortage of space in the hospital. Many of these older pharmacies still operate as closed, almost isolated rooms where the pharmacists' only contact with the staffs they serve is through a small window opening into the corridor.

Part of a hospital pharmacy's acceptance by the medical staff as a place of consultation and pharmaceutical information is determined by the atmosphere it emanates. The nurse or physician who has to lean over a Dutch door to talk to the pharmacist or knock on a side door to enter the pharmacy will not be inclined to do so any more frequently than is absolutely necessary. Consequently, many opportunities for mutually beneficial discussions may be lost. The proper atmosphere for a pharmacy must be projected to those whom it seeks to serve.

This is not meant to imply that pharmacies with only small service windows should be subjected to remodeling programs, nor is any criticism directed at those who operate them. However, a great many hospitals all over the United States are expanding, and many pharmacies are being enlarged. More and more frequently, the pharmacist is being consulted on the planning of new pharmacy facilities, and it is in such a situation that every effort should be made to give the pharmacy a "new look." When the pharmacist is given an opportunity to aid in remodeling the pharmacy or in planning a new one, he should give as much thought to the exterior as to the interior. Functional but attractive designs should be developed.

Glass windows can be used to advantage, and, with a little effort, the pharmacy can be made the show place of the hospital. An open, well-lighted pharmacy which is kept clean and orderly is the proper setting for today's hospital pharmacist. The pharmacy is destined to be more and more in the public eye, and those who plan new pharmacies should be aware of the value of "putting up a good front."

Eli Lilly and Company

A PRESCRIPTION ALPHABET

Considering the hundreds of prescription items the pharmacist handles and the constant additions to and deletions from his stock, the controversy over the use of generic names versus trade names appears to have no immediate solution. All the questions below have definite answers. How many do you know? Fill in the blanks to spell the words which are synonyms or generic or trade-name equivalents.

A_____	Amobarbital, Lilly
B_____	Lilly's thiamine hydrochloride
C_____	Methylcellulose liquid, Lilly
D_____	Lilly's digitalis glucosides
E_____	Distilled tocopherols, Lilly
F_____	Methyl hexane amine inhaler
G_____A___	The hydrochloride is Acidulin®
H_____	Methapyrilene hydrochloride, Lilly
I_____	Lilly's erythromycin
J_____W___	Stramonium
K_____	Lilly's kaolin and bismuth compound
L_____	Liver-stomach concentrate with ferric iron and vitamin B complex
M_____	Thimerosal, Lilly
N_____	Lilly's penicillin and sulfonamides mixture
O___-_____	Cinchophen hydriodide, Lilly
P_____	Sugar-free terpin hydrate and codeine compound, Lilly
Q_____	The sulfate is used to control malaria
R_____	Liver-stomach, B_{12}, iron, and vitamin combination, Lilly
S_____	Secobarbital, Lilly
T_____	Lilly's methimazole
U_____	Phenaglycodol, Lilly
V_____	Ethinamate (Lilly's nonbarbiturate sedative)
W_____'	Benzoic and salicylic acid ointment
X_____	A condition for which Alphalin® Gelseals® might be used
Y____'_	A rule used for calculating children's doses
Z_____	Lilly's iron, vitamin B complex, and vitamin C liquid

1961 IN REVIEW

This has been a significant year in the history of pharmacy and medicine, and each member of the pharmaceutical profession has, in some measure, been affected by what has transpired. Remember these events?

—The Kennedy health-task-force report was released. This report included a recommendation for a $115 million program for building and renovating hospitals.

—Intensive investigation of counterfeit drugs was made by the FDA.

—The A.Ph.A. passed an amendment to its constitution requiring future applicants for membership to be registered pharmacists.

—FDA's new rules requiring "full disclosure" of data in labeling accompanying prescription packages became effective.

—A record appropriation of over $4 billion for the Department of Health, Education and Welfare was approved by the House Appropriations Committee; this included $10 million for grants for hospital research activities and facilities.

—The jury returned a verdict of guilty in the criminal antitrust indictment against Donald K. Hedgpeth and the Northern California Pharmaceutical Association.

—The first oral polio vaccine produced in the United States under Government specifications was given a trial test in Maryland.

—Merthiolate® packaged in a spray-type container was released to the public.

—The Senate Subcommittee on Antitrust and Monopoly investigation of pharmaceutical manufacturers continued.

ANSWERS TO ALPHABET

Amytal®, Betalin® S, Cologel™, Digiglusin®, Eprolin®, Forthane®, Glutamic acid, Histadyl®, Ilotycin®, Jimson weed, Kaomin®, Lextron®, Merthiolate®, Neopenzine™, Oxyl-Iodide®, Prunicodeine®, Quinine, Reticulex®, Seconal®, Tapazole®, Ultran®, Valmid®, Whitfield's, Xerophthalmia, Young's, Zentron™

Acidulin® (glutamic acid hydrochloride, Lilly); Alphalin® (oleovitamin A, Lilly); Amytal® (amobarbital, Lilly); Betalin® S (thiamine hydrochloride, Lilly); Cologel™ (methylcellulose, Lilly); Digiglusin® (digitalis glucosides, Lilly); Eprolin® (distilled tocopherols, natural type, Lilly); Forthane® (methyl hexane amine, Lilly); Histadyl® (methapyrilene hydrochloride, Lilly); Ilotycin® (erythromycin, Lilly); Kaomin® (kaolin and bismuth compound, Lilly); Lextron® (liver-stomach concentrate with ferric iron and vitamin B complex, Lilly); Merthiolate® (thimerosal, Lilly); Neopenzine™ (penicillin with sulfonamides, Lilly); Oxyl-Iodide® (cinchophen hydriodide, Lilly); Prunicodeine® (codeine and terpin hydrate compound, Lilly); Reticulex® (liver-stomach, B_{12}, iron, and vitamins, Lilly); Seconal® (secobarbital, Lilly); Tapazole® (methimazole, Lilly); Ultran® (phenaglycodol, Lilly); Valmid® (ethinamate, Lilly); Zentron™ (iron, vitamin B complex, and vitamin C, Lilly).

NEW topical corticosteroid provides superior anti-inflammatory and antipruritic activity

CORDRAN™

(flurandrenolone, Lilly) (6α-fluoro-16α-hydroxyhydrocortisone 16,17-acetonide)

. . . and to combat infection

CORDRAN™-N

(flurandrenolone with neomycin sulfate, Lilly)

To provide greater flexibility in usage, Cordran and Cordran-N are available in both a cosmetically acceptable vanishing cream and a hydrophilic ointment base.

Description: Cordran cream and ointment are new corticosteroid preparations for topical use. Each Gm. contains 0.5 mg. Cordran.

Cordran-N cream and ointment combine Cordran and a safe, effective wide-spectrum antibiotic, neomycin. Each Gm. contains 0.5 mg. Cordran and 5 mg. neomycin sulfate (equivalent to 3.5 mg. base).

The cream base is composed of stearic acid, cetyl alcohol, liquid petrolatum, polyoxyl 40 stearate, ethyl parahydroxybenzoate, glycerin, and purified water. The ointment base is composed of white beeswax, cetyl alcohol, sorbitan sesquioleate, and white petrolatum.

Side-Effects: No side-effects have been reported to date from the use of either the cream or ointment forms of Cordran and Cordran-N.

Contraindications and Precautions: Cordran and Cordran-N should not be used in the presence of tuberculosis of the skin, nor should they be used in the eyes.

If secondary bacterial infections of the skin are present prior to the use of Cordran, they should be treated also with appropriate anti-infective measures. If the infection present before the application of Cordran or Cordran-N, or developing during its use, does not respond promptly, discontinue the preparation until the infection has been adequately controlled.

Patients with superficial fungus or yeast infections should be treated with additional appropriate methods and must be under constant medical observation.

Although sensitivity has not been reported, a few individuals may be sensitive to these preparations. If any reaction indicating sensitivity is observed, discontinue the use of the product. If a patient has a proved idiosyncrasy to neomycin, another antibiotic may be used along with Cordran.

Since use of antibiotic agents may cause overgrowth of nonsusceptible organisms, constant observation of the patient is essential.

Administration and Dosage: Cream—For moist, weeping lesions. Rub a small quantity of cream gently into the affected areas two or three times daily. Vigorous application is not necessary and may damage the skin.

Ointment—For dry, scaly lesions. Apply a small quantity of ointment as a thin film to the affected areas two or three times daily.

How Supplied: All product forms are supplied in 7.5 and 15-Gm. tubes.

Lilly

QUALITY / RESEARCH / INTEGRITY

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not a general-purpose antibiotic

Albamycin is not a broad-spectrum antibiotic, recommended for routine infections. It is specific for staphylococci (including resistant strains), and its use alone should (with the exceptions listed below) be limited to those cases in which staph is known or strongly suspected to be the causative organism.

Albamycin*

Indications — Albamycin is indicated in the treatment of staphylococcic infections, particularly in patients sensitive to other antibiotics or in the infections in which the organism is resistant to other antibiotics and sensitive to Albamycin, and in urinary tract infections due to microorganisms resistant to other commonly employed antibacterial agents but sensitive to Albamycin — notably certain strains of Proteus.

Administration and Dosage — Capsules and Syrup: The recommended dosage in adults is 500 mg. every twelve hours or 250 mg. every six hours, continued for at least forty-eight hours after the temperature has returned to normal and all evidence of infection has disappeared. In severe or unusually resistant infections, 0.5 Gm. every six hours or 1 Gm. every twelve hours may be employed. The dose for children is 15 mg. per kilogram of body weight per day for moderately acute infections; this may be increased to 30 to 45 mg. per kilogram of body weight per day for severe infections. These doses may be administered on schedules similar to those for adults.

Parenteral: Intramuscularly — 5 cc. of Albamycin solution may be used directly by slow injection deep into the gluteal muscle. **Intravenously** — it is recommended that 5 cc. of Albamycin solution be diluted further with 250 to 1000 cc. of sterile injection solution of sodium chloride, Darrow's solution, or Ringer's solution and administered by intravenous infusion, or by diluting to a suitable quantity and administered by continuous drip infusion. **Do not use with dextrose solution.** When it is necessary to use a smaller volume intravenously, 5 cc. of Albamycin solution may be diluted to a minimum of 30 cc. with one of the above diluents and administered slowly over a period of five to ten minutes to avoid irritation of the vascular endothelium. The dosage for adults is 500 mg. Albamycin administered either intramuscularly or intravenously every twelve hours. For children with moderately acute infections, the dosage is 15 mg. per kilogram of body weight per day. The daily dosage should be administered in two divided doses at intervals of twelve hours. As soon as the patient's condition permits, parenteral Albamycin should be replaced with oral Albamycin therapy.

Side Effects — Albamycin is a substance of low toxicity but is capable of inducing urticaria and maculopapular dermatitis. Leukopenia, which was rapidly reversible, has been reported in approximately 1% of cases. All of these side effects disappear rapidly upon discontinuance of the drug. In a certain few patients, a yellow pigment has been found in the plasma. This pigment is a metabolic by-product of the drug which, however, may interfere with determination of bilirubin and icteric index. Its presence is not associated with abnormal liver function tests or liver enlargement.

Available — Albamycin, 500 mg., sterile, Mix-O-Vial.† Each Mix-O-Vial contains: 500 mg. Novobiocin (as novobiocin sodium), also 175 mg. Nicotinamide; 0.47 cc. N,N-Dimethylacetamide; 42.3 mg. Benzyl alcohol; 4.23 cc. water for injection. Albamycin Capsules. Each capsule contains: 250 mg. Novobiocin (as novobiocin sodium). Albamycin Syrup. 125 mg. per 5 cc. Each 5 cc. (one teaspoonful) contains: 125 mg. Novobiocin (as novobiocin calcium). Preserved with methylparaben, 0.075%, and propylparaben, 0.025%.

*Trademark, Reg. U. S. Pat. Off. — †Trademark, Reg. U. S. Pat. Off.

The Upjohn Company
Kalamazoo, Michigan

Upjohn 75th year

AMERICAINE® STOPS SURFACE PAIN IN 7 MINUTES, LASTS 6 HOURS

topical anesthetic of choice for hospital use

Americaine—the only 20% dissolved benzocaine topical anesthetic—relieves pain in seven minutes—for as long as six hours with a single application. The aerosol of choice among hospital pharmacists, Americaine is indicated after surgical procedures in gynecology and proctology, before examination or instrumentation.

100% good to excellent relief

In a recent blind study[1] of three topical anesthetic aerosol medications in 226 post-partum patients, Americaine proved superior in providing relief of surface pain; 100% of the patients reported good to excellent relief.

More physicians . . . more nurses . . . more patients prefer Americaine's relief. Anti-pruritic, bacteriostatic, fungicidal, water-washable . . . and no sensitivities have been reported in published papers including more than 12,000 controlled patients.[2-12]

Americaine®

Aerosol—Ointment—Suppositories

THE AMERICAINE FAMILY

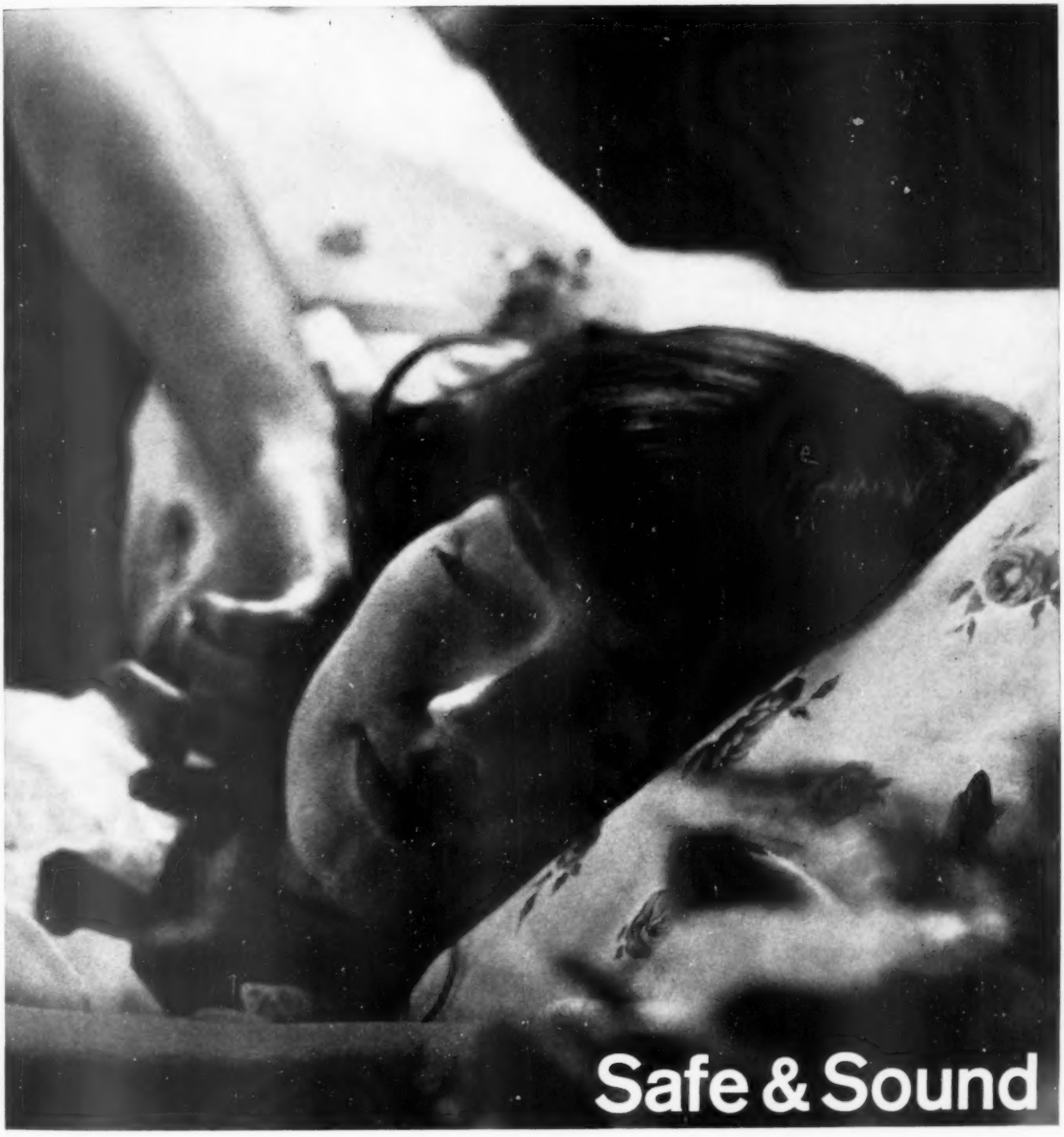
Americaine Aerosol: For quick, convenient sterile spray application, in 3 oz. ℞ size, and 6 oz. and 12 oz. dispensers.

Americaine Clear Ointment: For simple manual application, in 1 oz. tubes, 1 lb. and 7 lb. jars.

N E W Americaine Suppositories: In boxes of 12.

(1) Adelman, R. M.: Topical Anesthesia for Relief of Postpartum Discomfort (to be published); (2-12) references and literature furnished on request.

ARNAR-STONE LABORATORIES, INC., Mount Prospect, Illinois



Sleep is sound, sleep is secure with Doriden. Five years' clinical experience has proved its efficacy and wide margin of safety, has made it the most widely prescribed nonbarbiturate sedative. The clinical safety of Doriden—in terms of minimal side effects,[1,2] absence of respiratory depression,[1-4] and lack of adverse effects on liver,[5] kidney,[1,5] and blood—has been confirmed repeatedly. So, for *all* the benefits of safe and sound sleep—prescribe Doriden.

Now also available

Doriden Capsules

Supplied: *Capsules,* 0.5 Gm. (blue and white). *Tablets,* 0.5 Gm. (white, scored), 0.25 Gm. (white, scored) and 0.125 Gm. (white).

References: 1. Blumberg, N., Everts, E. A., and Goracci, A. F.: Pennsylvania M. J. *59*:808 (July) 1956. 2. Matlin, E.: M. Times *84*:68 (Jan.) 1956. 3. Hodge, J., Sokoloff, M., and Franco, F.: Am. Pract. & Digest Treat. *10*:473 (March) 1959. 4. Burros, H. M., and Borromeo, V. H. J.: J. Urol. *76*:456 (Oct.) 1956. 5. Lane, R. A.: New York J. Med. *55*:2343 (Aug. 15) 1955.

For complete information about Doriden (including dosage, cautions, and side effects), see current Physicians' Desk Reference or write CIBA, Summit, N. J. 2/2985MB

Doriden®
(glutethimide CIBA)

CIBA
SUMMIT • NEW JERSEY

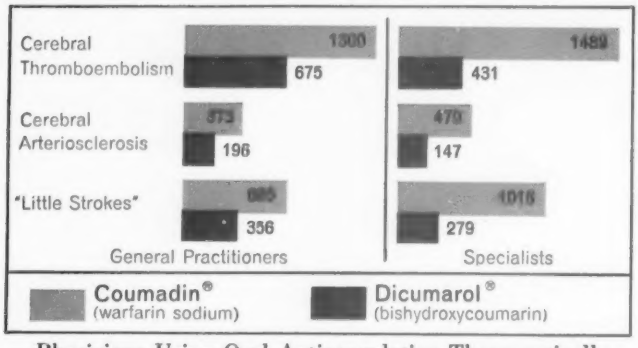
No. 3 of a series reporting on Endo Laboratories' Anticoagulant Survey

Nationwide Survey Explores Current Use of Anticoagulants in Cerebrovascular Disease

It has been estimated that there are 2,000,000 people suffering from vascular disease of the brain in the United States,[1] and that each year at least 500,000 persons are incapacitated by some kind of cerebral accident.[2] With the advancing age of our population, this problem is likely to increase.

As reported in previous numbers of this series, Endo Laboratories received replies to its comprehensive *Anticoagulant Survey* from a total of 10,016 physicians across the nation. Among the questions asked were — Are you now using oral anticoagulants for cerebral thromboembolism, cerebral arteriosclerosis, or "little strokes" — therapeutically, prophylactically? Without regard to the anticoagulant chosen, 14.4% of physicians reported use of oral anticoagulation in *therapy* of cerebral arteriosclerosis, 27.9% in little strokes, and 46.9% in cerebral thromboembolism. Anticoagulation was used *prophylactically* as follows: 10% in cerebral arteriosclerosis, 16.8% in little strokes, and 21.2% in cerebral thromboembolism.

Comparison of usage was also made among the 61.4% of reporting physicians prescribing Coumadin® most often and the 27.6% using Dicumarol®. (The remainder used indandiones [1.9%] and other anticoagulants.) The following graph shows the application of the leading anticoagulants *therapeutically* in cerebrovascular disease:

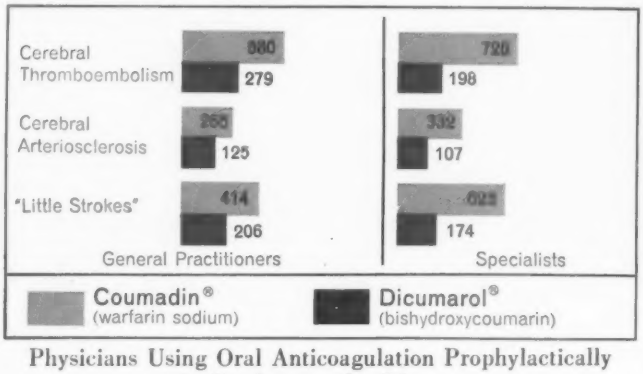


Physicians Using Oral Anticoagulation Therapeutically in Cerebrovascular Disease

Specialists Lead in Therapeutic Application of Anticoagulants

The analysis of the data presented in this survey indicates that 57% of the cardiologists and internists prescribing Coumadin — the most frequently prescribed oral anticoagulant — and 42% of the general practitioners used the drug therapeutically in cerebral thromboembolic disease. It is also noteworthy that 39% of the specialists used Coumadin in therapy of "little strokes" as compared with 22% of the general practitioners. Less frequent was its use as part of the therapy of cerebral arteriosclerosis — 18% among the specialists and 12% among the general practitioners.

Anticoagulation was used less often for prophylaxis than for therapy of cerebral thromboembolism, little strokes, or cerebral arteriosclerosis, as shown in the following graph:



Physicians Using Oral Anticoagulation Prophylactically in Cerebrovascular Disease

Indications According to Recent Clinical Reports

Clinical experience emphasizes the need for careful diagnosis and patient selection before using anticoagulants in cerebral vascular disorders. Authorities are generally agreed that anticoagulants help to minimize the occurrence of attacks in patients with *transient ischemic episodes*,[3-6] which are "far more common than was previously suspected."[3] In addition, anticoagulation is advocated in the slowly evolving *stroke*,[5-7] i.e., "slow-onset" infarction. Evidence in cases of *cerebral embolism* indicates that anticoagulants may reduce the mortality rate. In patients with *completed cerebral infarction*, the findings of Thomes[8] indicate that long-term anticoagulant therapy may be valuable in minimizing recurrences and mortality rate. His results also suggest that "there is no time when it becomes safe to discontinue anticoagulant therapy."[8] Since the source of cerebral dysfunction may lie in occlusive disease of the carotid arteries in the neck, cerebral angiography is recommended as a valuable means of establishing the diagnosis.[1,2]

Physicians choosing Coumadin for anticoagulation have reportedly done so (see No. 1 of this series) because of its predictable effect, ease of maintenance, and single daily dose which permit a smoother, more convenient, and less hazardous anticoagulant regimen.

1. Meyer, J. S.: Am. J. Med. 30:577, 1961. 2. Kuhn, R. A.: Current M. Digest 28:51, 1961. 3. Groch, S. N., and Wright, I. S.: Circulation 23:458, 1961. 4. Siekert, R. G.; Millikan, C. H., and Whisnant, J. P.: J.A.M.A. 176:19, 1961. 5. Carter, A. B.: Neurology 11:601, 1961. 6. Marshall, J.: Ibid. 11:139, 1961. 7. Groch, S. N.: Ibid., p. 141. 8. Thomes, A. B.: Minnesota Med. 42:1587, 1959.

this is where coughs begin...

this is where coughs often end !

Daily exposure to colds and contagion can't be controlled, but Robitussin does a superior job of checking the frequency and severity of the coughs that result from it. Remarkably safe to coughers of all ages, Robitussin produces a significant, prolonged, expectorant effect by tripling* the volume of respiratory tract fluid (RTF). Increased RTF helps loosen congestion by liquefying sputum and by enhancing the action of the bronchial and tracheal cilia. Thus, a Robitussin-treated cough is not abruptly or temporarily suppressed, but ends itself naturally by becoming more productive, cleansing the airways of irritating mucus and exudates. And most important, Robitussin tastes good to children and adults alike! Robitussin® is glyceryl guaiacolate, 100 mg. per 5 cc. dose; Robitussin® A-C adds prophenpyridamine maleate 7.5 mg., and codeine phosphate 10.0 mg. per 5 cc. dose (exempt narcotic).

*Cass, L. J., and Frederik, W. S., Am. Pract. Dig. Treat., 2:844, 1951.

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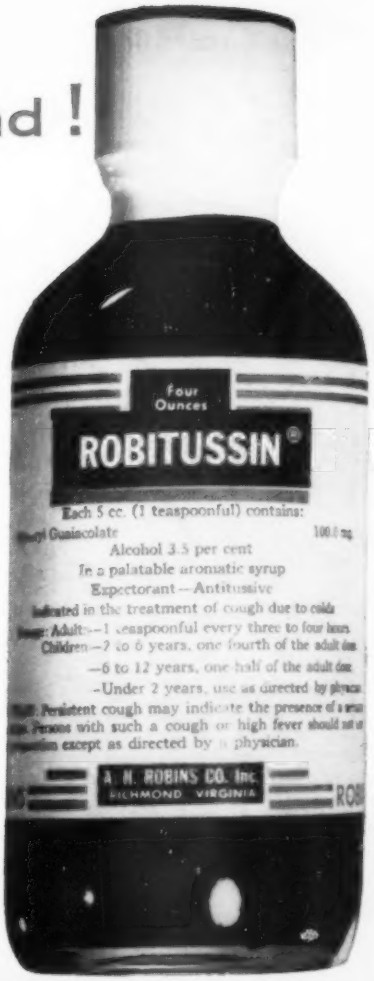


EVERYONE IS HAPPIER WITH FLEET ENEMA

because it's as easy as 1.2.3

Pre-lubricated, anatomically correct 2-inch rectal tube avoids injury

Check valve regulates flow

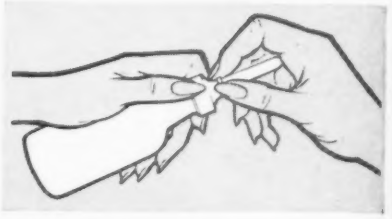
4½ fl.oz. of precisely formulated solution provides quick, thorough cleansing without patient discomfort

Compact squeeze bottle unit — no loose or moving parts

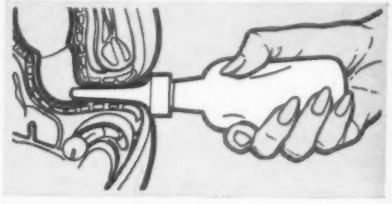
FLEET® ENEMA

READY-TO-USE SQUEEZE BOTTLE

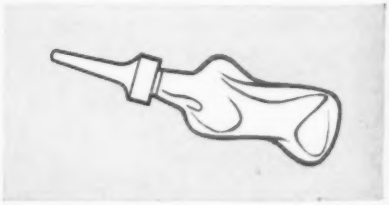
C. B. FLEET CO., INC. Lynchburg, Va.



1. ***Ready to use*** . . . no preparation necessary . . . just remove protective cover

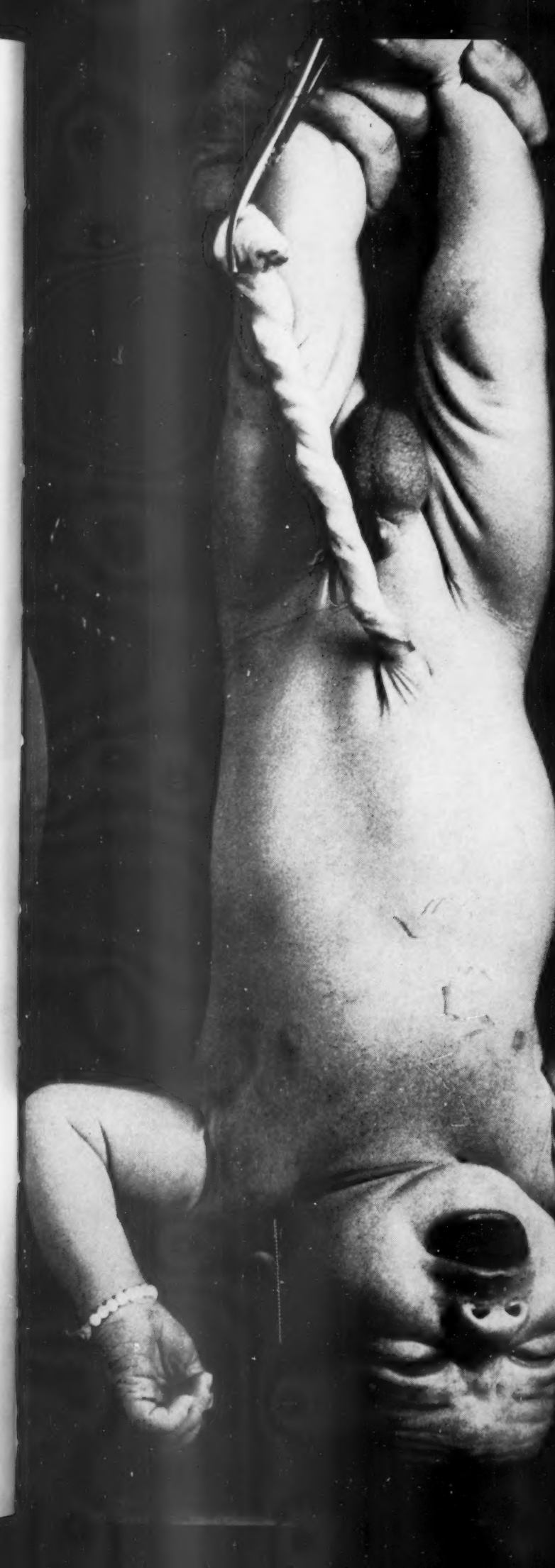


2. ***Easy to administer*** . . . by nurse or patient . . . takes less than a minute . . . just squeeze bottle with one hand



3. ***Disposable*** . . . simply discard unit after use . . . eliminates cleanup and sterilization

100 cc. contains: 16 Gm. sodium biphosphate and 6 Gm. sodium phosphate in 4½-fl.oz. squeeze bottle. *Pediatric size,* 2¼ fl.oz. *Also available:* Fleet Oil Retention Enema, 4¼-fl.oz. ready-to-use unit containing Mineral Oil U.S.P.



vitamin K_1 and the disappearance of neonatal hemorrhage

"The widespread use of vitamin K in the newborn has changed what was once a major pediatric problem . . . into a matter of only academic interest."*

KONAKION provides the most efficient means of routine vitamin K prophylaxis: faster rate of absorption than menadione or its derivatives, wider margin of safety than vitamin K analogs; both oral and parenteral dosages (the parenteral form is a fine aqueous dispersion compatible with most intravenous vehicles). Not a single case of kernicterus due to KONAKION has been reported. KONAKION is supplied in low-dosage ampuls, permitting economical one-time use.

A. J. Aballi, V. L. Banus, S. de Lamerens and S. Rozengvaig, J. Dis. Child. 97:524, 1959. And abstr. in J.A.M.A., 170:2249, 1959 and Nutrition Rev., 17:229, 1959.

Capsules — 5 mg; Ampuls — 1 mg/0.5 cc, 10 mg/1.0 cc, 25 mg/2.5 cc

KONAKION®

brand of vitamin K_1

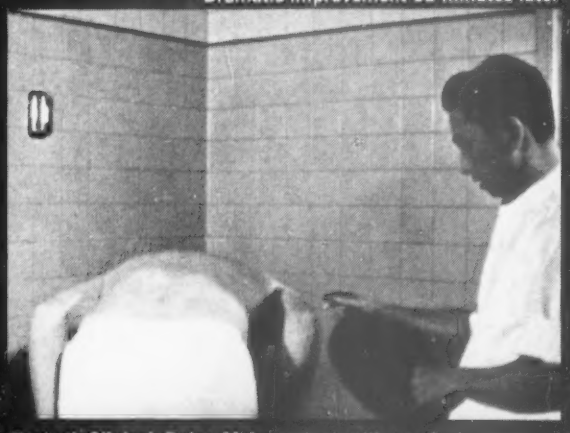
STOP BLEEDING . . . SAFELY

ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc. • Nutley 10, New Jersey

Maximal bending before medication

ROBAXIN Injectable administered

Dramatic improvement 15 minutes later



Factual Clinical Data: Male patient with marked spasm of right lumbar region found even slight bending extremely painful. Fifteen minutes after administration of 10 cc. of ROBAXIN Injectable, spasm had disappeared and patient could bend without pain. Photographs used with permission of patient.

References: 1. Carpenter, E. B.: Southern M.J. 51:627, 1958. 2. Forsyth, H. F.: J.A.M.A. 167:163, 1958. 3. Grisolia, A., and Thomson, J. E. M.: Clin. Orthopaedics 13:299, 1959. 4. Levenen, E. O., and Vaccarino, F. P.: Current Therap. Res. 2:497, 1960. 5. Lewis, W. B.: California Med. 90:26, 1959. 6. O'Doherty, D. S., and Shields, C. D.: J.A.M.A. 167:160, 1958. 7. Park, H. W.: J.A.M.A. 167:168, 1958. 8. Plumb, C. S.: Journal-Lancet 78:531, 1958. 9. Poppen, J. L., and Flanagan, M. E.: J.A.M.A. 171:298, 1959. 10. Schaubel, H. J.: Orthopedics 1:274, 1959.

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- "... a valuable therapeutic agent for the treatment of acute disorders involving skeletal muscle spasm."[4]
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...for continuing relief without drowsiness

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Arizona Society

At the September 21 meeting of the Arizona Society of Hospital Pharmacists, plans were outlined for participation in National Pharmacy Week at which time a display depicting the professional services of the pharmacist was placed in the Public Library. One of the projects outlined for the year is an audit of services including hospital committees, professional services, administrative services, and the pharmacy and therapeutics committee. Announcements were made regarding future meetings, seminars, and institutes.

The program included a lecture on "The Use of the Milliequivalent in Medicine."

Colorado Society

Members of the Colorado Society of Hospital Pharmacists met on Tuesday, June 20 at the St. Mary-Corwin Hospital in Pueblo. Eighteen members and guests were present for the meeting which was presided over by Mr. Irvin Friesen. Following dinner and a tour of the pharmacy department, Sister Marie Amadea introduced Mr. Glenn Harden, personnel director at St. Mary-Corwin Hospital as the guest speaker. In his subject, "Personnel Management," Mr. Harden explained why some employers obtain a higher quality of performance from their employees than others do with the same ability. He pointed out what employees want and need from their supervisors, and discussed how these might be fulfilled. Good communication was emphasized as a vital part of the employee-employer relationship.

During the business session the minutes were approved, a report on the meeting of the Colorado Pharmacal Association was presented by Mr. Friesen, and Mr. Herbert Carlin reviewed the history and recent developments in the anti-trust cases. He urged the members to support the "Defend the Profession" campaign and to encourage the support of other pharmacists.

At the September 19 meeting of the Colorado Society, Dr. Harold C. Heim, professor of Pharmacology at the University of Colorado, spoke on "Drug Evaluation." Starting with the production of a new compound by the organic chemist, he outlined the procedures involved prior to the release of a new drug by the F.D.A. He explained how specific conditions can be induced in experimental animals to test drugs exhibiting properties thought to be useful in the alleviation of these conditions. Problems of clinical trial on humans and the appearance of toxicity after release were also discussed.

During the business session reports were received from the Seminar Committee headed by Joseph LaNier, the Membership Committee under the chairmanship of Margie Gaasch, and the Educational and Legislative Committee was reported on by Jean Washburn.

The meeting was held at the University of Colorado Memorial Center in Boulder with twenty-six members and guests present. Dean Curtis Waldon of the School of Pharmacy welcomed the group and pledged the support of the School in the Society's efforts. He also briefly explained plans for the Hospital Pharmacy Institute which is to be held in Boulder during the week of June 25, 1962.

Connecticut Society

Members of the Connecticut Society of Hospital Pharmacists met for the Annual Installation Dinner on September 27 at the Wonder Bar, Berlin, Connecticut. Dinner was sponsored jointly by Parenteral Products Division of American Hospital Supply Corporation and Baxter Laboratories.

Mr. William E. Morris, professional service manager, Baxter Laboratories, gave a short talk in which he explained the growing need for hospital pharmacists to become fully acquainted with the use of milliequivalents, incompatibilities of parenteral solutions, and the newer devices being made available by parenteral solutions' companies.

President Louis Annino introduced a copy of *Connecticut Pharmacist*, September 1961, containing the minutes of the Joint Conference Committee of Connecticut State Medical Society and Connecticut Pharmaceutical Association dated August 16, 1961.

Additional business transacted during the meeting included a report on the results of the questionnaire sent to members of the Connecticut Society and announcement of plans of future meetings.

Dade County Society

"The Careless Ones," a movie made available through the courtesy of Merck Sharp & Dohme and Company was shown at the October 10 meeting of the Dade County Society of Hospital Pharmacists. The group met at Jackson Memorial Hospital in Miami.

During the business session, officers for the new year were installed including *President* Alfred A. Reinhardt, U.S.A.F. Hospital, Homestead, Florida; *Vice-President and Seminar Chairman* Mrs. Eileen Goldstein, Kendal Hospital, South Miami; *Treasurer* Mrs. Virginia Yearick, St. Francis Hospital, Miami; *Secretary* Fred Barrowclough, Cloverleaf Hospital, North Miami Beach; and *Chairman of the Legislative Committee* Miss E. Moran, Mount Sinai Hospital, Miami Beach.

President Reinhardt also reported on the recent meeting of the American College of Apothecaries which was held in San Francisco in October.

Georgia Society

The Georgia Society of Hospital Pharmacists held its Fourth Annual Seminar at the University of Georgia Center for Continuing Education in Athens on October 7-8. Opening the program on Saturday night, Mr. Joseph Oddis, executive secretary, AMERICAN SOCIETY OF HOSPITAL PHARMACISTS, addressed the group.

Following a group breakfast and non-denominational religious services on Sunday morning, the following program was presented:

"Current Developments in Antibiotics—Pharmacological, Chemical, Clinical"—panel presentation.

Participants: Dr. John Porter, research division, Lederle Laboratories, Pearl River, New York and Dr. Joseph P. LaRocca, associate professor of pharmacy, University of Georgia.

"Federal Regulations Pertaining to the Use of Tax-Free Alcohol," by Mr. Harold Meek, chief, Permissive Branch, Alcohol and Tax Division, Internal Revenue Service, Atlanta District, U. S. Treasury Department.

"Pharmacy Service in the Smaller Hospital"—panel presentation.

Participants: John J. Zugich, assistant director, University of Michigan Medical Center, Ann Arbor, Michigan; Lanier

Hardman, member, Georgia Board of Pharmacy, owner, Hardman's Prescription Shop, Covington; and Clayton McWhorter, chief pharmacist and assistant administrator, Phoebe Putney Memorial Hospital, Albany, Georgia.

Following the professional meeting, the Georgia Society of Hospital Pharmacists held a business session at which time new officers were elected. They include *President* Clayton McWhorter, Phoebe Putney Memorial Hospital, Albany; *Vice-President* James Dorsey, Grady Memorial Hospital, Atlanta; and *Secretary-Treasurer* Sister Mary Maurice, St. Joseph's Hospital, Augusta.

Southern Minnesota Society

Members of the Southern Minnesota Society of Hospital Pharmacists met on Monday, September 18 at St. Mary's Hospital in Rochester, Minnesota. The business meeting was preceded by a program to which other interested persons were invited.

Dr. J. E. Kiely and Dr. C. M. Blackburn, Mayo Clinic consultants of the coordinating section on cancer, spoke on "Drugs Used in Cancer Therapy." Dr. Blackburn introduced his talk by stating that the search for therapeutic agents has reached such staggering proportions that the major problem of chemotherapists is the evaluation of the numerous new agents. He explained some of the current research in this field and evaluated progress by saying that there have been minor advances in certain types of cancer, but that the palliation of metastatic cancer has been accomplished only to a small degree. Dr. Kiley divided the chemical agents useful in human cancer therapy into four groups and explained the action of each.

With President Earl Schwermann presiding, the business meeting was opened with a welcome to new members. Phyllis Hanson of the Rochester Methodist Hospital, and Ed Peterson of the Rice County District Hospital, Fairbeault. Committees were appointed and Mr. Dick Misgen gave a brief report on the Pharmacy Institute which was held in Albany, New York in June.

In outlining tentative plans for the year's meetings, President Schwermann announced the following program:

October: 5-FU (Rochester-Methodist Hospital)
November: Talk by a physical therapist (St. Olaf Hospital, Austin)
December: Artificial Kidney (St. Mary's Hospital)
January: Anesthetic Agents (Rochester-Methodist Hospital)
February: Care of the Psychiatric Patient (Rochester State Hospital)
March: Possibly a joint meeting with the Minneapolis group
April: Care of the Burn Patient *or* X-Ray Therapy (Naeve Hospital, Albert Lea)
May: Pharmacology of Steroids (Rochester-Methodist Hospital)

In a ten-minute report on ophthalmic solutions, Mr. Dick Subra discussed some of the problems which hospital pharmacists may encounter.

New Jersey Society

The New Jersey Society of Hospital Pharmacists held its September 21 meeting at the Schering Corporation in Union, New Jersey. Following dinner, President Henry Roche called the meeting to order and thanked the hosts for the opportunity to meet at Schering. Mr. Arthur Schmidt, director of hospital sales, Schering Corporation, introduced the officers of the Society as well as the company personnel present. A film entitled "Rx Caution," was presented by Mr. George Strayer, director of professional and trade relations at Schering. The film, prepared by the New Jersey Department of Health, showed the premises on which counterfeit drugs had been manufactured.

A discussion of the production of corticosteroids was presented by Dr. Jack Black of the Clinical Research Department of Schering Corporation.

Following the program, reports were received from the various committees and plans were outlined for future meetings during the year. Of particular note was the introduction of new members and a general discussion regarding membership activities. The Membership Committee was asked to make certain that all new members of the New Jersey Society are affiliated with the national organizations, the American Pharmaceutical Association and the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS.

The Society also took action to amend its Constitution in order to provide for honorary membership in the New Jersey Society. The amendment as proposed was approved for sending to all active members for a vote by mail ballot.

Other discussions covered information on internship programs in hospital pharmacy, the Brewer Dispensing Machine, and a review of regulations and legislation in New Jersey.

Western New York Chapter

The Western New York Chapter of the American Society of Hospital Pharmacists held its September meeting at the Deaconess Hospital in Buffalo. Following a dinner, prepared and served by the dietary staff of the hospital, the group adjourned to a meeting room for the evening's business.

Mr. Herbert Riemen introduced Mr. Charles McBride, district manager for Geigy Pharmaceuticals, who presented Geigy's Leadership Award to both the past president, Miss Kathleen DeClare, and the present president, Mr. Herbert Riemen.

The tentative program for the year's meetings was read and discussed, as well as possible projects for the coming year. About ten members of the group will attend the Pharmacy Assembly sponsored by Chas. Pfizer and Co., to be held at the Statler Hilton Hotel in New York City on October 14. The Assembly is being conducted by the New York State Council of Hospital Pharmacists. Lederle Laboratories will then be host to the group for an additional two days for a tour through their Pearl River facilities.

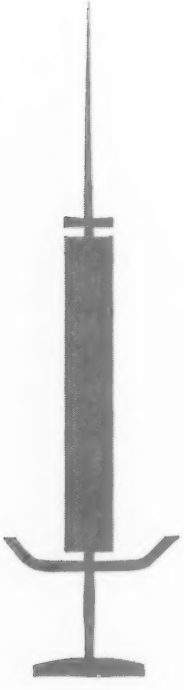
The meeting was adjourned after Mr. Francis Sturner of Buffalo General Hospital spoke to the group on the hospital pharmacist's duty as to keeping rigid quality control, as well as being a medical consultant in the hospital.

North Carolina Society

The North Carolina Society of Hospital Pharmacists held its quarterly meeting September 30, 1961, in Durham, with Gerald Stahl and the staff at Watts Hospital serving as hosts. An excellent panel of speakers was programed, the first beginning at 3:30 P.M. Dr. Robert Golby presented as his topic "Automation in the Hospital Laboratory;" Dr. Evelyn Coonrad "The Chemotherapy of Lymphomas and Malignancies;" and Dr. M. Bourgeois-Gavardin "Fluothane and Fluoride Compounds in Anesthesiology." A question and answer period followed each presentation.

Dinner was served to those attending in the hospital cafeteria. The Society was very fortunate in having as an after-dinner speaker Mr. Joseph Oddis, executive secretary of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS and director of the Hospital Pharmacy Division of the American Pharmaceutical Association. Mr. Oddis was enthusiastically received as he spoke on "Pharmacy and Hospital Pharmacy," during which he outlined the organizational structure of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS in relation to its parent organizations, the American Hospital Association and the American Pharmaceutical Association, and also the past-present history and future of hospital pharmacy as a profession. Dean Melvin Chambers of the North Carolina School of Pharmacy was welcomed as a guest; he proceeded to present plans for a seminar specifically designed for hospital pharmacists to be presented by the Educational Extension Division of the University.

CONTINUED ON PAGE 26



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References: 1. Eisenberg, G. M., Weiss, W., Spivack, A. P. and Flippin, H. F.: *Antibiotic Med. & Clin. Ther.*, 6:594 (1959). 2. Thomson, J. E. M.: Clinical Research Notes, Vol. 3, #3, p. 1 (1960). 3. Kanof, N. B., and Blau, S.: *Arch. Dermatol.* 83:503 (1961). 4. Bronwell, A. W.: Clinical Research Notes, Vol. 3, #3, p. 6 (1960).

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CONTINUED FROM PAGE 23

Akron Area Society

The Akron Area Society of Hospital Pharmacists met on October 10 at the Akron General Hospital. In the absence of the president, vice president Richard Rho called the meeting to order. Routine reports were received and guests introduced. Reports covered the Committees on Constitution and By-Laws, Disaster and Emergency, Program, and Public Relations.

Under old business, Mrs. Jeanne Sickafoose reported on plans for the state meeting which is to be held at the Sheraton Hotel in Akron on November 15. Discussions will cover pharmacy laws and the present status of pharmacy practice in nursing homes. Announcement was also made for future meetings including the Iowa Seminar, plans for the October 26 trip to New York City to visit Lederle Laboratories, and the Joint Meeting of the Akron Area Society of Hospital Pharmacists and the Summit County Pharmaceutical Association at which time A.Ph.A. President Warren Lansdowne will be the speaker.

Under new business members were informed of an invitation from the Western Pennsylvania Society of Hospital Pharmacists to a Seminar which is to be held on October 21 at the Carleton House in Pittsburgh. The principal speaker will be Mr. Herbert Flack, assistant director, Jefferson Medical College Hospital, Philadelphia.

Included on the program was a discussion of "Open Heart Surgery," supplemented with slides and motion pictures. This was presented by Dr. William H. Falor and Dr. Edwin G. Meyer of Akron.

Wisconsin Society

Members of the Wisconsin Society of Hospital Pharmacists met at St. Joseph Hospital, Milwaukee, September 22, 1961. Sister M. Agnese, chief pharmacist and hostess, welcomed the group.

The film—"The Next Stop"—produced by Pfizer, and summarizing the development, trial and use of the Sabin oral poliomyelitis live virus vaccine, was shown.

The speaker was Dr. Jack Klieger, associate professor of obstetrics and gynecology at Marquette Medical School and head of the Department of Obstetrics and Gynecology at St. Joseph's Hospital. His subject was "Rh Factor." Dr. Klieger explained its discovery, mechanism of action, and harmful affects which may occur.

President George Wright reported some of the committee activities and Society projects for the year. Robert Kubiak, president-elect and chairman of the Membership Committee, announced a dynamic program and enlisted the aid of all members.

The next meeting will be in conjunction with the Poison Control Seminar and Hospital Pharmacist—Administrator Conference on October 12-14 in Madison.

Texas Society

The Texas Society of Hospital Pharmacists has accepted the resignation of William A. Liesch, Jr., of McAllen, as president of the Society. Mr. Liesch is leaving Texas for a position at Moody Air Base for Pilot Training in Valdosta, Georgia.

Succeeding him is the vice president, Col. Reuben G. Lewis, who is presently pharmacist at Children's Hospital, Dallas. Other officers of the Texas chapter are Blanche Groos of San Antonio, treasurer, and Ken Tiemann of Austin, secretary.

The 1962 annual meeting of the Texas Society will be in conjunction with the 14th Annual Seminar for Hospital Pharmacists at the University of Texas in Austin, February 24 and 25.

NEW MEMBERS

The following ASHP members sponsored the New Members listed in this issue of the JOURNAL. *The officers of the* SOCIETY *and the Committee on Membership and Organization appreciate the efforts of the individuals who have encouraged New Members to join the national organizations.*

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MEETING DATES

1961

December

American Association for the Advancement of Science
Annual Convention, Denver, Colorado, December 26-31.

1962

January

Annual Clinical Hospital Pharmacy Seminar
State University of Iowa, College of Pharmacy, Iowa City, Iowa, January 21-24.

February

Texas Hospital Pharmacy Seminar
University of Texas, Austin, February 23-25.

March

American Pharmaceutical Association Convention
(including Annual Meeting of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS), Las Vegas Convention Center, Las Vegas, Nevada, March 25-30.

May

Catholic Hospital Association
Annual Convention, St. Louis, Missouri, May 18-24.

June

General Institute on Hospital Pharmacy
University of Colorado College of Pharmacy, Boulder, Colorado, June 25-29.

August

General Institute on Hospital Pharmacy
Duquesne University College of Pharmacy, Pittsburgh, Pennsylvania, August 13-17.

September

International Pharmaceutical Federation
Nineteenth General Assembly, Vienna, Austria, September 1-7, 1962.

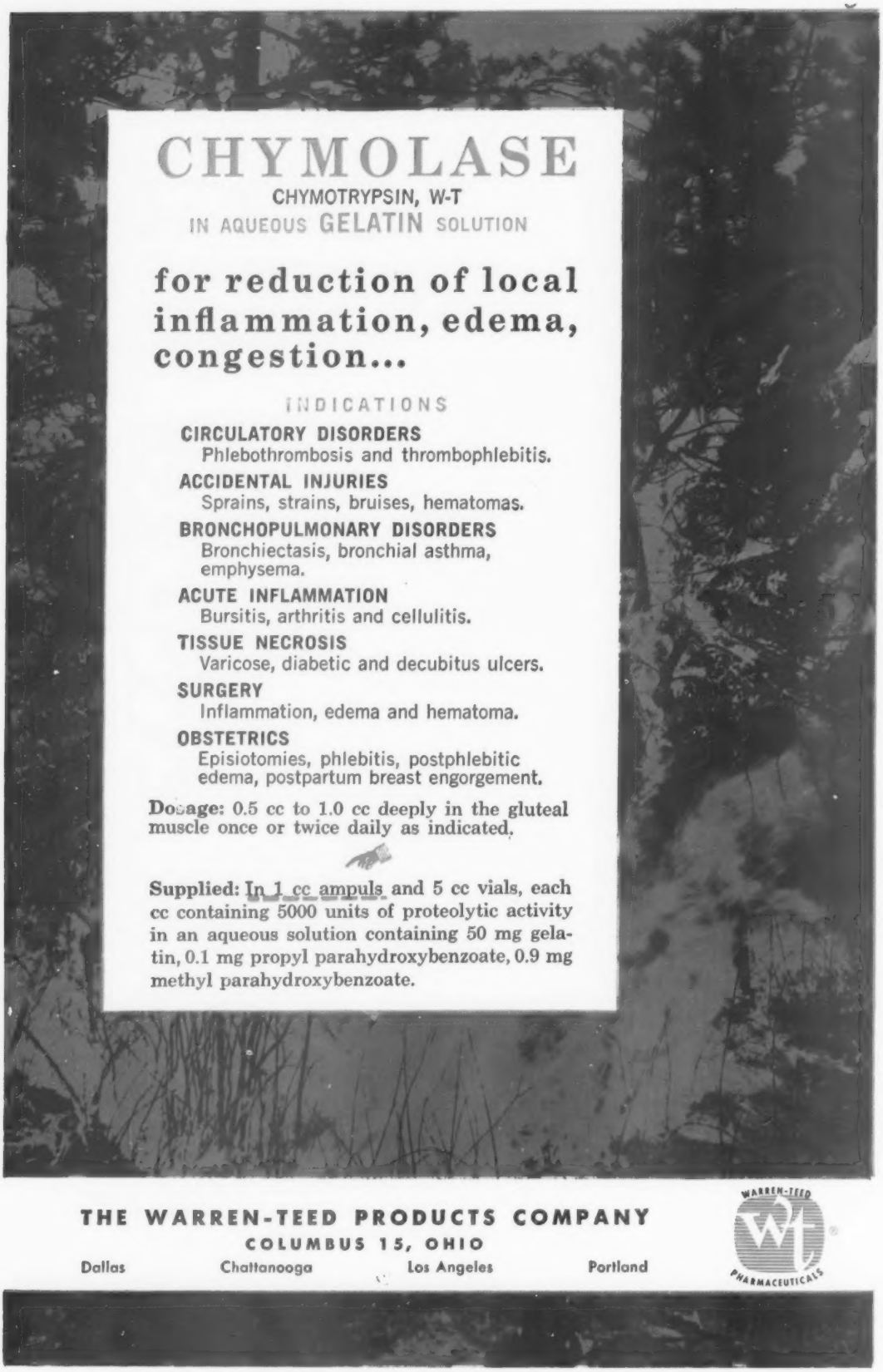
American Hospital Association
Annual Convention, Chicago, Illinois, September 17-20.

October

Specialized Institute on Hospital Pharmacy
American Hospital Association, Chicago, Illinois, October 15-19.

December

American Association for the Advancement of Science
Annual Convention, Philadelphia, Pennsylvania, December 26-31.



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Bronchiectasis, bronchial asthma, emphysema.

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Bursitis, arthritis and cellulitis.

TISSUE NECROSIS
Varicose, diabetic and decubitus ulcers.

SURGERY
Inflammation, edema and hematoma.

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Dear Sirs:

To Secretary Oddis

DEAR SIRS: I have not forgotten your thoughtfulness of last April in wiring the best wishes of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS on my election as executive secretary of the American Association of Colleges of Pharmacy. While your wire was misplaced for a while in the confusion of convention papers, I then decided that this letter would be the first issued from our office at 1507 M Street, N.W. Thus, this accounts, in part, for the delay.

I appreciate the good wishes of your members as the AACP initiates an important step in the history of pharmaceutical education. I am proud of the opportunity to have a part in it. I know that with full cooperation of other associations in pharmacy we can make notable progress in the years ahead, progress which will be of value not only to our immediate members but to your members and all of pharmacy as well. For the profession can advance no faster than its educational system.

Please express my thanks to your members for their best wishes.

CHARLES W. BLIVEN, *Secretary*

1507 M St., N.W.
Washington, D. C.

ASHP Resolution on Plastics

DEAR SIRS: Thanks most kindly for your letter of June 16 which transmits to us the ASHP resolution on standards for plastics, which was adopted at the Annual meeting of the SOCIETY in Chicago last April.

The U.S.P. Committee of Revision has an active interest in providing standards for plastics used in connection with pharmaceuticals. We are working closely with a committee of the P.M.A.* Pharmaceutical Contact Section which has organized a vigorous study of the problems involved in providing the needed standards. For the past two years, we have been working with orthopedic surgeons on providing standards for implants used for internal splinting. This has brought us face to face also with the problem of the needed standards for plastic materials used as replacements in the vascular system. However, the surgeons have agreed that the most pressing need is for attention to metallic implants so that we have deferred for the present the problems of plastic implants.

As we see it, the problem of greatest magnitude concerns the use of plastics as containers and in devices for administering drugs. We shall follow the work of the Contact Section closely and it is our present hope that we will get much of the help we need from the latter program. Should there be any indication that this is not the case, I anticipate that we will appoint a U.S.P. advisory panel to work out the necessary standards for containers, including closures, and the apparatus used for giving drugs.

I have had a long-standing personal interest in extending the use of plastics because it seemed to me that therein lies our best hope of reducing the relatively high cost of packaging drugs. Up to now, however, the plastics industry has not been able to provide a plastic material having the desired characteristics.

I shall be grateful to have your help in keeping the SOCIETY informed of our interest and progress on this subject.

LLOYD C. MILLER, Ph.D.,
Director of Revision

The United States Pharmacopeia
46 Park Avenue
New York 16, New York

*Pharmaceutical Manufacturers Association.

Correction

DEAR SIRS: In the April issue of THE JOURNAL, page 257, I was given credit for a presentation at the Texas Hospital Pharmacists Seminar in Austin. I wish that I were qualified in the subject but since I am not, please give credit to Mr. Herschel Stine, business manager of Harris Hospital in Fort Worth, Texas, who is pictured on my left.

M. GEORGE WEBBER,
Associate Professor of Pharmacy

College of Pharmacy
University of Houston
Houston 4, Texas

EDITOR'S NOTE: Our error. The caption on the photograph which appeared in the April issue of THE JOURNAL should have read "Conversation here centers around Mr. Herschel Stine, business manager of Harris Hospital, Fort Worth, who spoke on 'Fiscal Problems of Hospital Management.'"

arresting measure for surgical bleeding

When the customary surgical techniques for capillary hemostasis fail, prompt cessation of oozing may usually be obtained with OXYCEL (oxidized cellulose, Parke-Davis). This absorbable hemostatic conforms readily to all wound areas...assures a clear operating field...helps to shorten operative procedures.

Available in forms for every need: OXYCEL (oxidized cellulose, Parke-Davis). Pledgets (Cotton-type), 2¼ in. x 1 in. x 1 in.; Pads (Gauze-type) (8-ply), 3 in. x 3 in. and 4 in. x 12 in.; Strips (Gauze-type) (4-ply), 5 in. x ½ in., 18 in. x 2 in., 36 in. x ½ in., and 3 yd. x 2 in.; Foley cones (Gauze-type) (4-ply), 5 in. and 7 in. diameters. Sterile as supplied.

Indications: As an adjunct to effect hemostasis in bleeding associated with capillary oozing. *Use:* Strips—temporary packing of bleeding cavities, nasal passages, and tooth sockets; pads—temporary packing of surgical beds as after biopsies and to cover more or less extensive areas as in laparotomies; pledgets—in neurosurgery and in dental work for small localized bleeding areas; Foley cones—in prostatectomy.

Precaution: Excess amounts should be removed prior to surgical closure to avoid foreign-body reaction. Not to be used in sites of infection or following silver nitrate or other escharotic chemical agents. Contraindicated in clean bone surgery when poor vascularization is present and in instances where rapid callus formation is desired. Should be used sparingly in open reduction of fractures and in cancellous bone. Will not withstand heat sterilization. Remove from container aseptically.

FEB. 1961 (P-568)

PARKE-DAVIS

PARKE, DAVIS & COMPANY, Detroit 32, Michigan

absorbable hemostatic

OXYCEL®

editorial

by DON E. FRANCKE

International Congress of Pharmaceutical Sciences

Pisa Congress Continues Important Pattern

► THE SCIENTIFIC SECTION OF THE International Pharmaceutical Federation is performing an outstanding service for the profession through its sponsorship of annual congresses of the pharmaceutical sciences. These congresses accomplish several objectives. First, they provide for the pharmaceutical sciences an international forum which compares favorably with international bodies representing other branches of science. Second, they bring together each year hundreds of pharmacists with scientific interests, providing for them opportunities to present and discuss results of investigations. Third, these congresses not only create a greater appreciation of the values and roles of scientific pharmacy, they also encourage those who work in these often lonely areas, serve as a catalytic stimulus for new research and, further, widen the appreciation of specialists as well as general practitioners of the work others are doing for the advancement of knowledge. And, finally, they give emphasis to the truth that the deepest roots of pharmacy lie in the sciences where constant nourishment is necessary for vigorous, sustained growth.

Although the Pisa Congress was the 21st, it was not until 1958 that the Scientific Section under the leadership of Professor R. Ruyssen (Belgium) and Professor K. Steiger (Switzerland) was able to arrange for annual congresses. In 1958, the General Assembly of the F.I.P. was postponed for a year. It was then decided that a Scientific Congress should be held in its place. Thus, in 1958 a congress was held in Leiden. This congress attracted over 200 participants and 40 papers and provided the organizers with the encouragement they needed. Their hopes were further stimulated by the Zurich Congress in 1959 when attendance rose to 500 and the number of contributed papers to 80. In 1960 the General Assembly of the F.I.P. was held in Copenhagen and here, as has now become the established pattern, a scientific symposium devoted to one or two areas was held. Thus, the pattern for the F.I.P.'s scientific congresses is to hold a specialized symposium in the years the General Assembly meets, when time for meetings is limited, and in alternate years, to hold a scientific congress much broader in scope encompassing all of the specialties which come under the umbrella of the scientific section—pharmaceutical and analytical chemistry, pharmacognosy, biological chemistry and toxicology, galenical and technical pharmacy, and pharmacology.

The Pisa Congress was organized under the leadership of the Scientific Section's new president, Professor M. Guillot (France), by the Federazione Ordini Farmacista Itəliani with Professor Remo de Fazi as Chairman of the Organizing Committee. About 500 pharmacists from more than 30 countries attended the meeting in Pisa, 4-8 September. The topic, Suspensions, Emulsions and Foams," formed the theme for the symposium sessions with papers on "The Structure and Stability of Emulsions," by Professor Guillot; "The Constitution and Stability of Foams," by Professor Ruyssen; "Suspensions in Pharmaceutical Practice," by Dr. Polderman (Holland); "Emulsions in Pharmacy," by Dr. Gallo (Italy); and "Aerosols in Pharmacy," by Dr. Cavanna (Italy). Several periods were allocated for discussion of these presentations.

In addition, meetings of five specialized sections were held during the week at which a total of about 100 communications were presented. Professor Schwartz (California) served as Chairman of the Galenical Pharmacy Section. Others from the United States registered were Dr. Poe (Colorado), Dr. Blumel (Texas), Dr. Grassette (California), Dr. Jonas (Minnesota), Miss Kalinsky (New York), Dr. Lovotti (California), Dr. Bywater (New York), and Dr. Gallardo (Iowa).

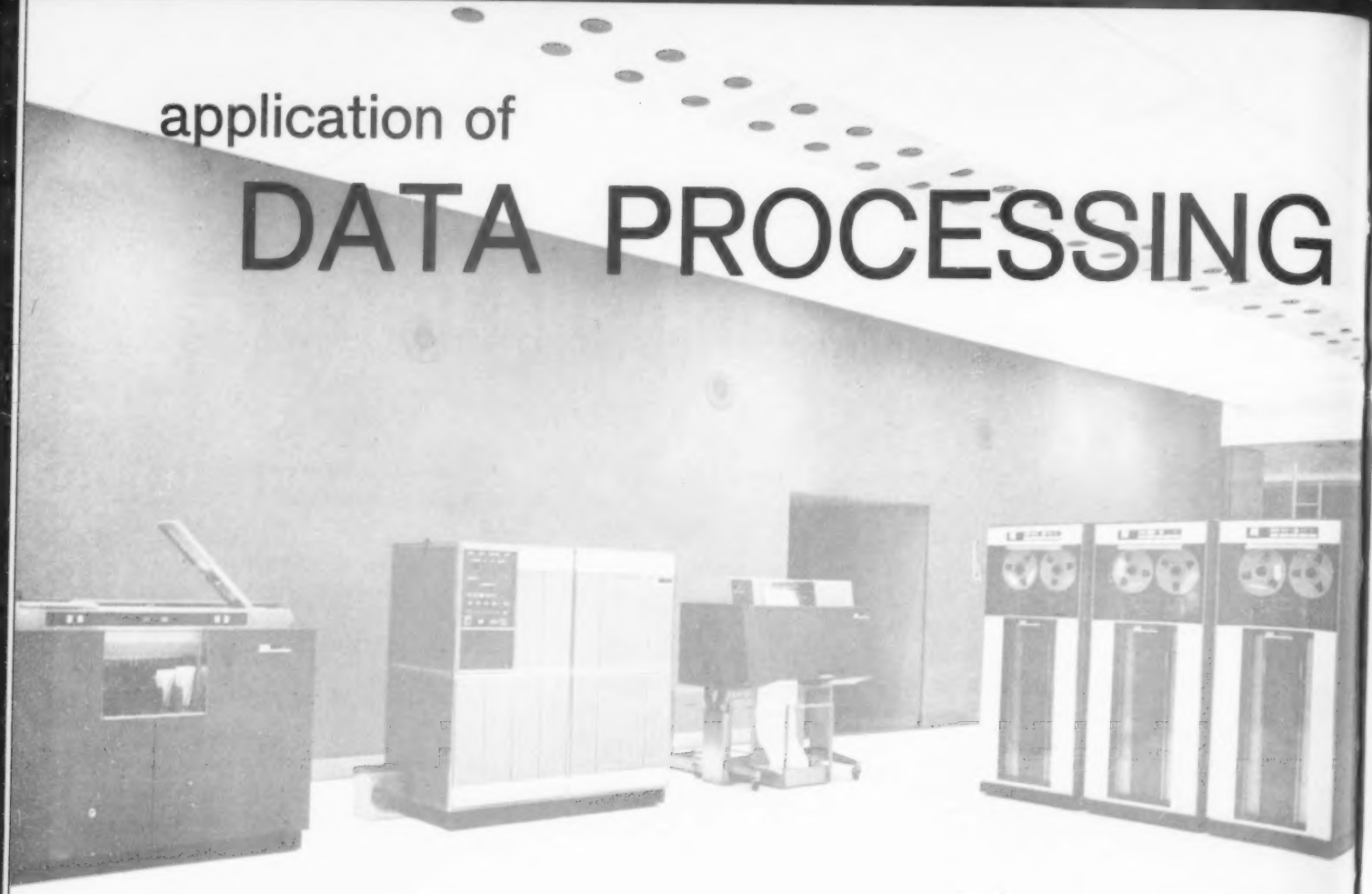
The opening session was held in the Great Hall of the University where participants were welcomed by the Rector of the University, a representative of the Mayor of Pisa, by Professors Tonte and de Fazi of the Italian Pharmaceutical Society, and by F.I.P. President Sir Hugh Linstead.

A medal commemorating the Pisa Congress was dedicated to the hospital pharmacist Guiseppe Orosi. It bore his likeness on the obverse and the coat of arms of Pisa on the reverse. Professor Orosi was a hospital pharmacist in Leghorn where he established a laboratory for chemical and pharmaceutical research and was the author of numerous articles and books, one of which was for many years the official pharmacopeia.

Other events included an evening in Scotto Gardens with a recital by the Pisa Choral Society and a reënactment of the "Gioco del Ponte," Game of the Bridge, by cavaliers in 15th century uniforms; an excursion to Larderello where natural underground steam is used to produce 2 billion KWH of electricity annually and also produces such chemicals as boron and sulphur; an organ recital at the National Church of the Knights of St. Stephan where two organs dating from the 16th and 17th century have been combined for a total of 313 commands, three keyboards of 61 keys each and over 5000 pipes; and an official banquet.

application of

DATA PROCESSING



by PETER P. LAMY,
IVAN F. BOURN,
and
HERBERT L. FLACK

EQUIPMENT

to the hospital formulary

► THE IMPORTANCE OF THE FORMULARY SYSTEM in the hospital has long been recognized. Therefore, when the Jefferson Medical College Hospital was faced with the need to revise its formulary, the question was not why but how to publish it.

It was estimated that about 800 copies would be needed for members of the medical staff and nursing units. It was established, on recommendation of The Pharmacy Committee, that yearly thereafter a new edition should be published. The authors were confronted with the usual problem of economics, that is, to find the least expensive method of publishing the original formulary in such a way as to permit continued use of the material in later revisions.

There are several methods that could be used to publish a formulary. All were given rather careful consideration. All were found to be lacking in some degree and did not meet the exacting specifications the authors had established.

The use of stencils was considered. This method has the advantage that only one or two proofreadings are necessary. It lacks flexibility, however, and the stencils, once cut, are not easily changed. Remington Rand's Flexoprint Panels were also considered, as were Acme Visible Records Photo Panels. These systems were to be used to prepare master copies, which would then be duplicated by means of Xerography or other photographic processes.

After due consideration of these and others, it was

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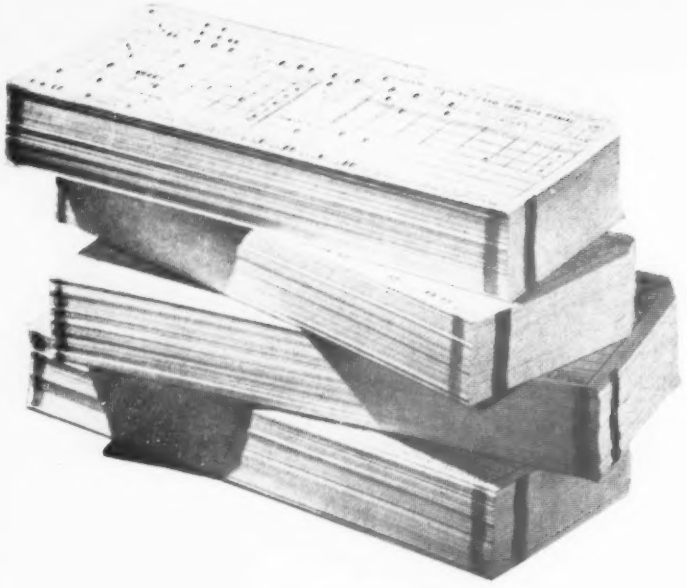
Presented at the Annual Meeting of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS, Chicago, Illinois, April 25, 1961.



decided to use a punch card system. Since Jefferson had an IBM punch card installation, it was natural to use this equipment. Actually, other makes of this type of equipment could have been utilized.

Data Processing Equipment

The well-programmed use of punched cards can make complex problems less complex and simple problems less tedious and time-consuming. This use has aroused the interest of many people whose activities have of necessity been limited by their tools, e.g. an alphabetized list of words either on bound sheets or in conventional card files. The introduction of punched card techniques has broadened the horizon and has opened many new vistas which are now being cultivated. The great extent to which this is being done is evident from the many publications discussing research, development, and applications of new devices, tools and systems in this field.

The two general types of punched cards in common use are hand-sorted and machine-sorted. The machine-sorted cards, as those by IBM for example, have twelve punching positions in a vertical column which constitute a coding unit. Combinations of these twelve punching positions are used to punch alphabetical information in the card. Digits are indicated by punching one of the positions number 0 through 9, while for each of the letters two holes are punched in the same column. Once the initial data has been recorded by key-punch as holes in the card, other machines can sense these holes electrically. They can automatically perform a variety of operations such as rearranging the cards into any required sequence, printing the information on the cards or on a sheet of paper, and many others. Electrical impulses, transmitted through the holes in the cards, are used to read the recorded data and control the operation of the machines. For a brief description of the several machines involved in this project, see Appendix A.

Cards are supplied in a variety of sizes but the most commonly used is 3¼ x 7⅜ inches. A stack of approximately 150 cards measures one inch in thickness.

Procedure

A complete inventory of all drugs stocked in the pharmacy was taken. An IBM card was punched for each item, listing the non-trade name, category, number and tradename(s) and an indication showing whether it had been official in the previous formulary, and whether it is a narcotic drug. The cards were arranged alphabetically by an IBM sorter and interpreted by an IBM interpreter to check the accuracy of the cards. They were then machine-sorted according to categories and several lists were printed. These were presented to the Pharmacy Committee and to its nineteen-member Advisory Subcommittee together with a machine-prepared list of *American Hospital Formulary Service* and additional categories.

These lists were discussed by the individual departments of the Medical Staff at their weekly meetings and recommendations were conveyed to the Pharmacy Committee through the departmental representatives. The decisions of the committees were carefully recorded on a master list. From this annotated list, four different listings were prepared alphabetically by category (additional cards being punched where necessary):

1. Drugs to be included in the new formulary
2. Drugs not to be included in the new formulary
3. Drugs where members of the committee had opposing views
4. Duplication of drugs in each category

These four lists were again submitted to the Pharmacy Committee for approval together with a revised list of categories. The necessary changes were made and finally approved by the Attending Medical Staff. Final lists of formulary drugs, alphabetically and by category, were then prepared for the use of the formulary editors.

To provide uniform appearance, it was necessary to outline in detail the exact format of the monographs. The monograph specifications (Appendix B) outline monograph format and content. The establishment of a standard arrangement resulted in a final product uniform in appearance and consistent in style.

Once the specifications had been determined, the source data for the keypunch operators was prepared. Rather than type the source data on sheets, visible record forms were used for flexibility. These were lined forms intended for insertion in a ring notebook (Figure 1). One visible record form was used per monograph and per cross listing. Sufficient space was left on each page for additional information to be added at a later date. The standard monograph specifications were used. The completed visible record forms were

carefully checked several times by different individuals for accuracy of data, format, spelling, and punctuation. When this was found to be correct, the form was inserted alphabetically in the ring notebook.

As an aid to the keypunch operator, each line on the visible record form was numbered with a colored pen, the number designating the starting column. The visible record forms were checked again, this time by comparing the minutes of the Pharmacy Committee with the forms to insure that the data represented the exact decisions of the committee. The accuracy of crosslistings was then checked. The material was proofread once more, insuring at this time that no lines extended beyound eighty columns. The material was then forwarded to the keypunch personnel.

The data was transferred to IBM cards, one card per line of source material. A comparison between the printed copy and the punched cards revealed that the IBM printer was not wired properly. Adjustments were made until a correct copy was obtained. The cards containing errors were manually removed, destroyed and new cards were punched. When all the replacement cards had been verified, they were inserted by hand into the card file. The entire file of cards was now reproduced. The copy was checked for accuracy and completeness by teams, one individual reading aloud the original, the other reading the printed copy. After additional corrections were completed, the final copy was printed as continuous copy on unruled IBM paper rather than the standard ruled paper.

An index was prepared using data processing equipment. A card was punched for each drug, listing the category and the name of the drug. The cards were arranged alphabetically by an IBM sorter. A previously prepared list of drugs by categories served as source material for the index cards. The machine-printed copy was proofread several times.

The material was marked for page breaks and the printer reduced the copy optically to about sixty percent of the original size and prepared photo-offset plates. Proofs were prepared from the plates and a

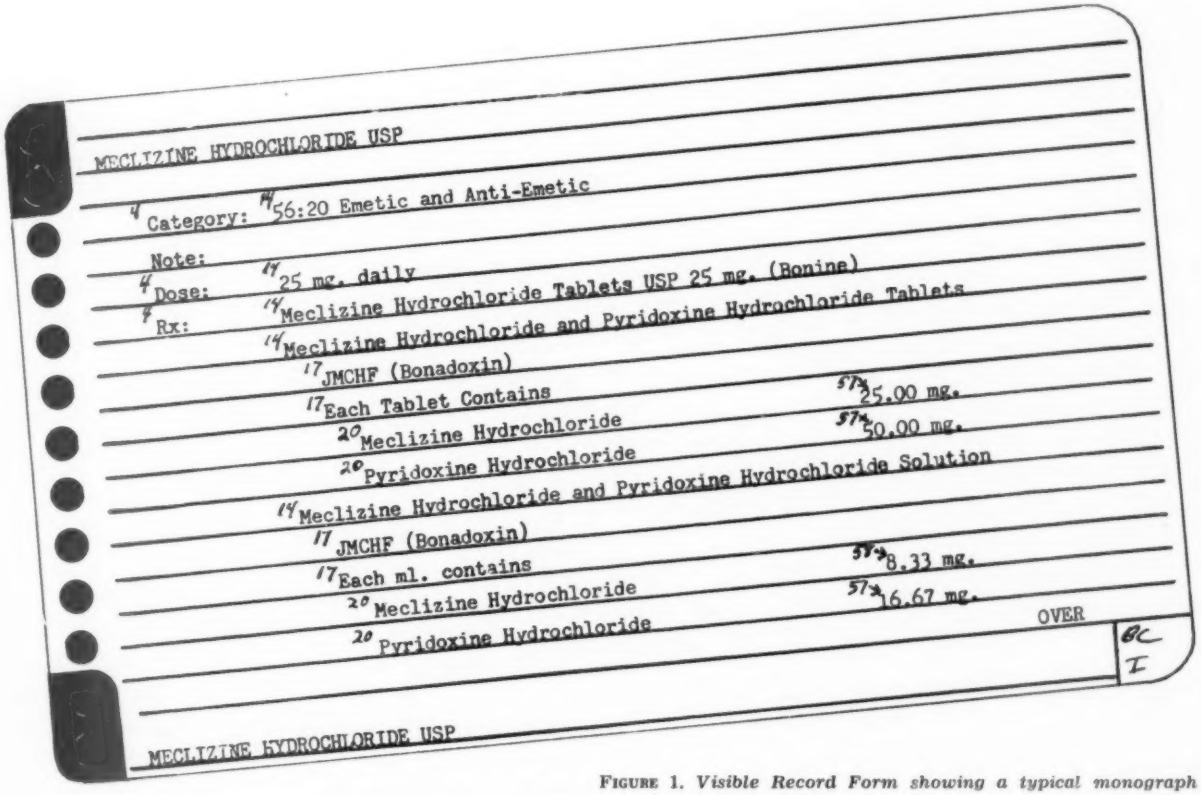


FIGURE 1. *Visible Record Form showing a typical monograph*

SPECIFICATIONS FOR KEY PUNCH OPERATOR

1. Numbers indicated in green ink are for information only. For example, the number 4 indicates that this particular word should start in the 4th column from left hand margin, while the number 14 indicates the 14th column.
2. Watch for the word "OVER." Do not punch, but turn card over for additional data.
3. Do not punch the word "NOTE" etc. if additional data is not present on line.
4. Do not punch the bottom or visible line of the front side of card nor any initials placed in the extreme lower right hand corner.
5. If there should be a line that extends beyond 80 columns, begin on next line. Avoid splitting words.

```
ABSOLUTE ALCOHOL  SEE ALCOHOL USP

ABSORBABLE GELATIN  SEE GELATIN, ABSORBABLE

ABSORBABLE GELATIN FILM  SEE GELATIN, ABSORBABLE

ACETAZOLAMIDE USP
   DIAMOX
   CATEGORY  28.12 ANTICONVULSANT,  40.28 DIURETIC,  54.36 UNCLASSIFIED
             ENT AGENT
   DOSE      ORAL, 250 MG, DAILY,  PARENTERAL, THE EQUIVALENT OF 250 MG. OF
             BASE, IM OR IV
   RX        ACETAZOLAMIDE TABLETS USP 250 MG.
             ACETAZOLAMIDE SODIUM FOR INJECTION USP 0.5 GM./5 ML. VIAL

ACETEST  SEE SODIUM NITROPRUSSIDE

ACETIC ACID USP
   CATEGORY  40.36 IRRIGATING SOLUTION,  84.12 ASTRINGENT
   RX        ACETIC ACID SOLUTION JMCHF 1/8% AND 1/4%, 1,000 ML.

ACETONE TEST REAGENT  SEE SODIUM NITROPRUSSIDE

ACETOPHENETIDIN USP
   PHENACETIN
   CATEGORY  28.08 ANALGESIC AND ANTIPYRETIC
   DOSE      300 MG. Q4H PRN
   RX        ACETOPHENETIDIN TABLETS USP 300 MG.

ACETYLSALICYLIC ACID USP
   ASA,  ASPIRIN
   CATEGORY  28.08 ANALGESIC AND ANTIPYRETIC
   DOSE      0.6 GM. Q4H
   RX        ACETYLSALICYLIC ACID TABLETS USP 300 MG.
             ACETYLSALICYLIC ACID TABLETS, ENTERIC COATED JMCHF 300 MG.
                AND 600 MG.
             ACETYLSALICYLIC ACID SUPPOSITORIES JMCHF 0.6 GM.

ACETYLSALICYLIC ACID COMPOUND
   APC,  ASA COMPOUND,  EMPIRIN COMPOUND
   CATEGORY  28.08 ANALGESIC AND ANTIPYRETIC
   NOTE      ACETYLSALICYLIC ACID COMPOUND TABLETS WITH CODEINE ARE
             INTENDED FOR OUTPATIENT USE ONLY
   DOSE      ONE TABLET Q4H PRN
   RX        ACETYLSALICYLIC ACID COMPOUND TABLETS NF
                EACH TABLET CONTAINS
                   ACETYLSALICYLIC ACID                  230.00 MG.
                   ACETOPHENETIDIN                       150.00 MG.
                   CAFFEINE                               30.00 MG.
             ACETYLSALICYLIC ACID COMPOUND TABLETS WITH CODEINE JMCHF
                - EMPIRIN COMPOUND NO. 2 -
                THIS IS A NARCOTIC DRUG
                EACH TABLET CONTAINS
                   CODEINE PHOSPHATE                      15.00 MG.
                   ACETOPHENETIDIN                       150.00 MG.
                   ACETYLSALICYLIC ACID                  210.00 MG.
                   CAFFEINE                               30.00 MG.
             ACETYLSALICYLIC ACID COMPOUND TABLETS WITH CODEINE JMCHF
                - EMPIRIN COMPOUND NO. 3 -
                THIS IS A NARCOTIC DRUG
                EACH TABLET CONTAINS
                   CODEINE PHOSPHATE                      30.00 MG.
                   ACETOPHENETIDIN                       150.00 MG.
                   ACETYLSALICYLIC ACID                  210.00 MG.
                   CAFFEINE                               30.00 MG.

ACHROMYCIN  SEE TETRACYCLINE HYDROCHLORIDE USP

ACID MANTLE CREME  SEE ALUMINUM ACETATE USP

ACIDULIN  SEE GLUTAMIC ACID

ACTASE  SEE FIBRINOLYSIN - HUMAN -

ACTH  SEE CORTICOTROPIN
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FIGURE 2. *Sample page from Jefferson Medical College Hospital Formulary, Fourth Edition*

mockup was made by the printer. The mockup was carefully read for omission and/or misplacement of material by the printer. Corrections were indicated and a second proof prepared, which proved to be errorless.

Data processing equipment is much like an adding machine. If the adding machine is in proper condition and if the correct information is supplied, then the answer is correct. Likewise, data processing machines, correctly wired and supplied with correct cards, will deliver an errorless result.

Discussion

In deciding on the method of publication of the new formulary, serious consideration was given to all systems which would provide the desired flexibility. The most desirable method seemed that which would permit the reuse of a substantial part of the old formulary, thereby affecting savings in manpower. Once a stencil, a master copy, or some similar copy had been produced, it should be possible to use that part of it again that would remain unchanged.

With this in mind, systems previously mentioned were found to be lacking. In the initial considerations of punched cards it was decided that a change from the conventional system to a punch card system would be desirable only if the new system would provide all the functions of the standard system and also offer significant advantages. It was agreed that a punch card system used in the preparation of a hospital formulary might be regarded as experimental but the authors recognized the virtues of a system that could be changed without invalidating any previous input.

One of the most valuable properties of a punch card system is its multi-dimensional or multi-aspect coding possibilities. Each of various independent aspects of a subject matter may be coded independently. Thus, for example, substances may be coded and printed according to composition or form, together with their chemical or physical properties.

Many meetings evolved the fact that the chief expense involved in establishing a file of punched cards would not be the cost of the cards or the cost of punching the information into the cards or of reproducing that information. The chief expense would be in obtaining the information to be punched in the cards, involving as it does a large amount of time in assembling the facts.

The expense of programming had to be given careful scrutiny also since that must be done by technically trained persons. After weighing all advantages and disadvantages, it was thought that if cards could be reproduced readily when necessary, and if most of the information gathered may be used again in future times, the original cost would be distributed over all the sets of formularies finally printed and large savings in manpower could then be effected.

Having decided to use data processing equipment, the authors plunged straight into the great unknown! While the authors may not be able to provide a completely objective report on the actual work performed, since unfortunately five different IBM installations had to be used, certain conclusions can be drawn from this project.

Several unforseen disadvantages developed. First was the fact that a particular card could accommodate only 80 columns, which necessitated many abbreviations. In order to avoid as many of these abbreviations as possible, all 80 columns were used for monograph information. This proved potentially undesirable since it was forcefully made clear that the cards should be coded or numbered consecutively when one box of cards scat-

tered on the floor accidentally and had to be reassembled manually. This numbering could be done by "end-stamping," that is by numbering each card on the end of the reverse side of the card. This could also be done by sacrificing the last six or seven columns. If done by machine, this would have the added advantage that the cards could be arranged numerically in a very short time should they become disarranged.

Several undesirable factors which could not be controlled at first should be mentioned. In some instances mistakes were made when information was punched into the card. In cases where this involved a misspelling only, the keypunch operator originally attempted to correct this by using a special paper to close the incorrect hole in the card. When these cards were later interpreted, the electrical impulses proved sensitive enough to sense the incorrectly punched hole.

Machines also proved troublesome in other areas. For some reason, still unexplained, they often failed to interpret the first letter in a line and would at other times literally run amok, interpreting the cards wholly incorrectly. This was explained as being due to the sensitivity of the wiring system, where a little dust could cause a connection to malfunction.

In the development work, all these factors caused inconvenience and added cost. Before each of these was recognized and pinpointed, numerous and repeated proofreadings were necessary, involving an unproportionally large amount of manpower. Once acquainted with these shortcomings, most of them were circumvented and efficiency was greatly increased.

One possible objection to the proposed procedure is the problem of typography. Copies printed using IBM equipment will be completely in upper case letters and some punctuation, such as the colon and the semicolon, will be missing.

Considering all these adverse factors in retrospect, the authors believe this system offers several advantages which outweigh the disadvantages. By using data processing equipment throughout the development of the formulary, the Pharmacy Committee and its nineteen-member Advisory Subcommittee were kept informed readily and easily of changes, additions, and deletions. Many different lists were produced, all at minimal cost, and were given to the members on short notice for consideration. Thus, a list of all psychotherapeutic agents was produced, for example, when the particular department wanted to consider these drugs in a departmental meeting. Changes could be completed instantly by simply manually replacing the appropriate card(s). Additions to a certain monograph could be accepted almost up to the time of publication, as could deletions. In perfecting the format of monographs, even extensive changes were often made which would have necessitated much more effort and time if data processing equipment had not been used.

However great the advantages of the IBM data processing system may have been in publishing the current formulary, the greatest dividends are expected to develop when a new edition will be published each June. This system should then prove itself since certain lines of certain monographs, or even complete monographs can be reworded simply by removing the corresponding cards. New monographs will be added by simply manually inserting previously prepared cards alphabetically. It is anticipated that at least 80 percent of the cards originally prepared will be used in publishing the coming revision thus saving considerable time preparing and proofreading a completely new copy.

Recommendations

The authors recommend that serious consideration be given to the publication of a hospital formulary by the use of data processing equipment. As a service to hospitals lacking personnel to compile their own formulary, the authors offer at nominal cost the *Jefferson Medical College Hospital Formulary, Fourth Edition.* A formulary can easily be prepared by reproducing the IBM cards and sending them to the requesting hospital. If IBM equipment is not available in that hospital, then the IBM Service Bureau or a commerical firm can produce copy from these cards.

The authors recommend that the ASHP provide a similar contribution by making an abridged version of the *American Hospital Formulary Service* available on cards to hospitals for a fee.

A hospital requiring only a small number of formulary copies could effect considerable savings in printing costs by printing directly by IBM printer onto a paper master or ditto stencil and publishing an 8½ x 11 inch formulary. Hospitals needing less than 50 copies could utilize the copies produced directly by the IBM printer.

APPENDIX A
Brief description of equipment used

Keypunch

A machine used for punching holes in the cards. Cards are fed into the machine automatically and move forward column by column under the control of the program card which governs duplicating, skipping, and the kind of information (either alphabetical or numerical) to be punched on the cards from the combination keyboard. MODEL USED – 026

Verifier

A machine used to detect transcription errors. Once a card is punched, it becomes the basic record from which all transcription is subsequently done by machine. However, since this does not relieve the possibility of errors in the original punching, the verifier has been provided to check punching accuracy. A verifier duplicates all the operations of the keypunch. The verifier will place a notch over the column having the error. Cards that are errorless are notched at the right end. MODEL USED — 056

Sorter

A machine used to arrange cards into any desired order, according to the data punched into them. Sorters also separate the cards into numerical or alphabetical groups having certain specific information. MODEL USED — 082

Collator

A machine having the principal function to compare two sets of punched cards simultaneously in order to match or to merge them. It will check the card file for cards out of order. There are two types, one for numerical information and one for alphabetical information. MODEL USED — 085

Printer

A machine used to obtain a printed report of data punched in the cards. The printer prints all the information on one line at once at the rate of 150 lines per minute. MODEL USED — 407

Card Interpreter

A machine used to print at the top of the card whatever data is punched into the same card. MODEL USED — 548

APPENDIX B
Monograph specifications

►A MONOGRAPH shall be written for each chemical entity. The monograph shall list all dosage forms of a specific drug as well as combinations in which this drug is the main ingredient.

Monograph Title
(begin on column 1)

The monograph title shall consist of the official or nonproprietary name of the basic chemical entity appearing in the preparations to be listed in the monograph. The name shall be written in full including the name of the salt. The abbreviation USP or NF shall appear after the title if the *chemical* is official.

Synonyms
(begin on column 4; information begins on column 14 for the first line; column 17 for second line; column 20 for the third line and all lines thereafter).

Synonyms shall be those of the basic chemical, listed in alphabetical order. The synonyms pertaining to the pharmaceutical preparations shall be listed under the Rx section of the monograph. A comma, followed by two spaces, shall be placed between synonyms.

Category
(begin on column 4; information begins on column 14 for first line; column 17 for second line; column 20 for the third line and all lines thereafter).

The categories shall be those assigned to individual formulary preparations by the Pharmacy Committee. The name and number of the categories shall be those of the *American Hospital Formulary Service* plus certain categories developed by the Pharmacy Committee. The category assigned by the Pharmacy Committee shall be listed first by the category number followed by the category name. If more than one classification is necessary, then these shall be listed in increasing numerical order. Abbreviations of category names shall not be used unless necessary. Classifications shall not be added for special services i.e., Urology, nor for those pertaining to the source of drug.

Note
(begin on column 4; information begins on column 14 for first line; column 17 for second line; column 20 for the third line and all lines thereafter).

The note shall contain information pertaining to procedures differing from the normal routine or those of unusual importance. Cautions shall be listed under this heading as well as dispensing restrictions, i.e., "Dispensed to Anesthesiology Department only."

Dose

(begin on column 4; information begins on column 14 for first line; column 17 for second line; column 20 for the third line and all lines thereafter).

Doses shall be listed for all preparations except topical (including Eye, ENT) preparations, anesthetic agents, or where there is a complicated dosage schedule. Doses listed shall be those of the USP, NF or those supplied by the requesting service. If only oral preparations are listed in the monograph, then only the oral dosage shall appear.

If there is more than one route of administration of the preparation, each dose shall be preceded by the appropriate word, e.g., PARENTERAL, 300 MG., QID, SC, etc., except where the drug is given only once or twice daily in which case no abbreviation shall be used. If a drug requires an initial and then a maintenance dose, then it shall be so listed. If a combination or extended release preparation is recognized in the formulary, then only the dose of the basic drug shall be listed unless otherwise stated.

Rx

(begin on column 4; for each preparation; information; begins on column 14 for first line; column 17 for second line and heading for a formula where such appears; column 20 for the third line and all lines thereafter; formulas begin on line 20 with column 58 used for the decimal point).

Preparations shall be listed in the following sequence:

Tablets
Enteric coated tablets
Capsules
Other oral preparations, e.g. elixirs, syrups, etc.
Parenteral preparations IV, IM, SC and others
Lotions
Ointments
Others

The title of each preparation in the Rx section shall be arranged in the following sequence: Name, status, strength, size of container and form, trade name, and formula if any.

NAME—The official title shall be used if the preparation appears in the USP or NF, otherwise a standard reference book is consulted. At times the title shall be modified in order to be more descriptive—for injection, for IM injection, etc. Enteric coated tablets shall be listed, as for example, ACETYLSALICYLIC ACID TABLETS, ENTERIC COATED.

STATUS—If the preparation is official in either the USP or NF it shall be so listed. Otherwise it shall be listed as JMCHF (Jefferson Medical College Hospital Formulary).

STRENGTH—This shall be given in the metric system per unit dose. Under 0.5 Gm. it shall be listed as milligrams; 0.5 Gm. and over shall be listed as grams. Exceptions may be made where there are two strengths, one over and one under 0.5 Gm.

SIZE AND FORM OF CONTAINER—The size or volume shall be listed for injectables or other items dispensed in the original package. The type container shall be listed only in the case of parenterals to differentiate between ampuls and vials. A comma and one space preceeds the size of container. At times the strength may be combined with the size of container, e.g. 50 mg./1 ml. ampul, 250 mg./10 ml. vial, etc.

TRADENAMES—The tradenames of the approved brands or other synonymous name for the specific dosage form shall be listed here. A dash then one space shall precede and a space and dash shall follow the synonymous names. A comma and two spaces is placed between each name if more than one is used. All synonyms are cross-indexed.

FORMULA—Where there is more than one active ingredient, the formula shall be listed if the preparation is not USP or NF. Where it is necessary to state the formula, it shall be headed "Each tablet contains," "Each 100 ml. contain," "Each 100 Gm. contain" or in some cases, "Each Gm. contains." The formula shall be given using the full nonproprietary names of the ingredients. The amounts of ingredients shall be stated to two decimal places. Where indicated, the formula may be stated in percentages.

GENERAL—In the case of some preparations, a restrictive statement may be added, e.g., "This is a narcotic drug," "This is a restricted drug."

Please note—**Because the IBM keypunch equipment available to the authors at Jefferson did not have certain typographic characters activated (there would have been an extra monthly service charge to do so), it was necessary to make the following generalizations for the person typing the monograph:**

1. **Where a colon is normally indicated replace as follows:**
   a. **Eliminate colons after words "Category," "Note," etc.**
   b. **Replace colons found in A.H.F.S. categories (72:00) with periods (72.00).**
   c. **Replace colons found in ratios (1:1,000) with dash (1-1,000).**
2. **Replace semicolons with comma and two spaces.**
3. **Replace parenthesis with dash and one space (Aspirin) to — Aspirin —**

NATIONAL INSTITUTES OF HEALTH PHOTO

the method used to CHARGE FLOOR STOCK MEDICATIONS at the Mountainside Hospital

by ANNA C. RICHARDS *and* REGINA RICHARDS ROSSI

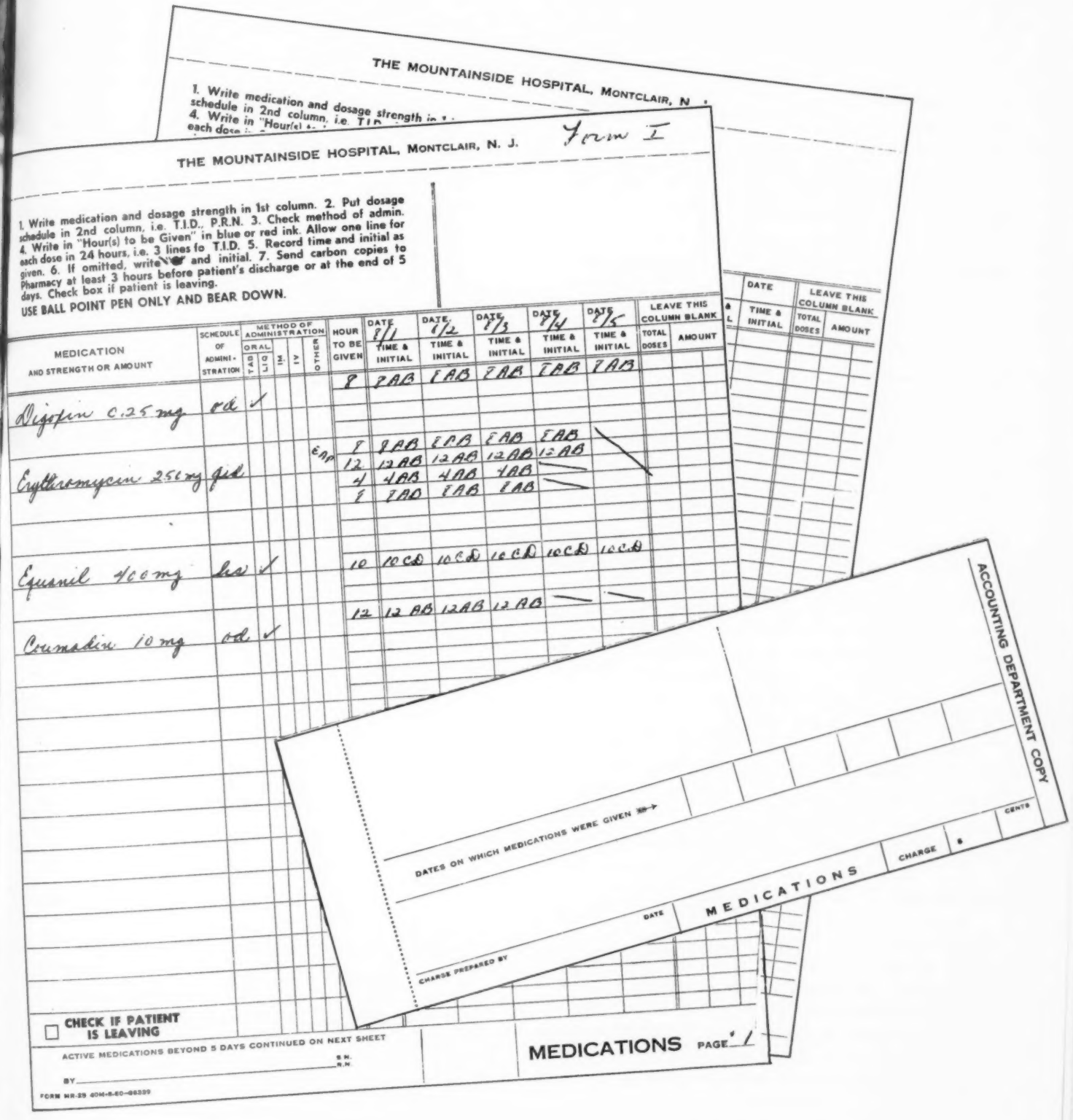
► HAVING MEDICATIONS AVAILABLE as floor stock on the nursing stations has obvious advantages. Obtaining charges for this floor stock necessitates an accurate recording of medications administered to each patient and subsequent charging from the record.

ANNA C. RICHARDS is Relief Pharmacist and REGINA RICHARDS ROSSI is Director of Pharmacy Service, both at The Mountainside Hospital, Montclair, New Jersey.

To obtain this administration record, we suggest the use of a "Medications Sheet" as an integral part of each patient's chart. This "Medications Sheet" (See Form 1) is a three part form—the original remains as a permanent part of the chart, the duplicate is the pharmacy copy, and a third part constitutes the charge ticket for accounting. This sheet shows all medications administered over a five day period.

Role of the Nurse

When a patient is admitted to the hospital a "Medication Sheet" (properly charge-plated) is inserted as the first form in his chart. When a medication is ordered for a patient, the nurse enters the name of the medication, strength or amount, schedule and method of administration, and the hours it is to be administered


THE MOUNTAINSIDE HOSPITAL, MONTCLAIR, N. J. Form I

1. Write medication and dosage strength in 1st column. 2. Put dosage schedule in 2nd column, i.e. T.I.D., P.R.N. 3. Check method of admin. 4. Write in "Hour(s) to be Given" in blue or red ink. Allow one line for each dose in 24 hours, i.e. 3 lines fo T.I.D. 5. Record time and initial as given. 6. If omitted, write "O" and initial. 7. Send carbon copies to Pharmacy at least 3 hours before patient's discharge or at the end of 5 days. Check box if patient is leaving.
USE BALL POINT PEN ONLY AND BEAR DOWN.

MEDICATION AND STRENGTH OR AMOUNT	SCHEDULE OF ADMINISTRATION	METHOD OF ADMINISTRATION: ORAL TAB	ORAL LIQ	IM	IV	OTHER	HOUR TO BE GIVEN	DATE 8/1 TIME & INITIAL	DATE 8/2 TIME & INITIAL	DATE 8/3 TIME & INITIAL	DATE 8/4 TIME & INITIAL	DATE 8/5 TIME & INITIAL	LEAVE THIS COLUMN BLANK: TOTAL DOSES	AMOUNT
Digoxin 0.25 mg	od	✓					8	EAB	EAB	EAB	EAB	EAB		
Erythromycin 250 mg	qid					EAP	8	EAB	EAB	EAB	EAB			
							12	12 AB	12 AB	12 AB	12 AB			
							4	4 AB	4 AB	4 AB				
							8	EAB	EAB	EAB				
Equanil 400 mg	hs	✓					10	10 CD	10 CD	10 CD	10 CD	10 CD		
Coumadin 10 mg	od	✓					12	12 AB	12 AB	12 AB				

☐ CHECK IF PATIENT IS LEAVING

ACTIVE MEDICATIONS BEYOND 5 DAYS CONTINUED ON NEXT SHEET

BY _____ R.N.

FORM NR-29 40M-8-60-66330

MEDICATIONS PAGE 1

ACCOUNTING DEPARTMENT COPY

DATES ON WHICH MEDICATIONS WERE GIVEN →

CHARGE $ CENTS

CHARGE PREPARED BY DATE

MEDICATIONS

in the appropriate places on the "Medications Sheet." Each time a dose is given the nurse writes the hour and her initials (if a dose is omitted the nurse writes a slash mark (/) in the space provided). As the nurse records medications administered she is simultaneously recording information from which the pharmacy can compute the patient's drug charge.

At the end of five days, or when the patient is discharged, the nurse removes the "Medications Sheet," leaves the original with the patient's chart as a permanent record, and places the carbon copy and attached charge slip in an envelope and sends it to the pharmacy. These are sent to the pharmacy daily in the drug basket unless a patient is being discharged in which case the carbon and the charge slip are sent to the pharmacy immediately, to be priced and sent to the Cashier in order that the charge may be posted immediately.

Method of Charging for Floor Stock Medications

It must be remembered that *all* medications received by the patient are written on the "Medications Sheet." Some of these are floor stock medications and others are special medications (not floor stock). *If the medication is a floor stock medication it is charged by the pharmacy clerk on the Medications Sheet. If the medication is a special drug obtained for the patient it is not charged on the Medications Sheet.* In charging, the pharmacy clerk uses a charge book set up in this manner:

PRICE	MEDICATION	LOCATION
0.02 ea.	A-C Troches	on all floors except 1E, 2E, & 3E
N.C.	Aspirin Tab gr. 5	on all floors

The clerk can readily discern which medications are floor stock and therefore charged on the Medications Sheet, and which are not floor stock and not charged on the Medications Sheet. Certain medications are charged at a certain rate per day.

The pharmacy clerk totals the number of doses given of any chargeable floor stock drug and places the charge on the Medications Sheet. She then totals the charges and places the grand total on the small charge slip which is sent to the cashier to be posted.

Advantages

TO THE NURSES: Utilizing the Medications Sheet a larger variety of chargeable items can now be stocked on the nursing units with certainty of obtaining charges, hence time spent by the nurse in requisitioning medications for individual patients and returning same for credit is greatly reduced. With a larger floor stock, the nurse obtains the same medication for various patients from one container rather than searching for each patient's container. Medications will be readily available for immediate use when needed, thus decreasing nurses' trips to the pharmacy. Charting the medications administered is simplified, for when a nurse administers a medication she writes only the hour and her initials on the Medications Sheet. The name of the medication is written only once in five days.

TO THE PHARMACY: The pharmacy is now assured that all medications administered are recorded and can be charged. With a larger floor stock, the number of individual drug requisitions received in the pharmacy will be greatly reduced as will handling and filing of these slips. Packaging and labeling for individual patients, pricing of individual requisitions, and issuance of credits will be reduced. A competent pharmacy clerk can price the five-day Medications Sheet.

TO THE PHYSICIAN: The doctor can easily review the medications administered by glancing at the Medications Sheets; he no longer must search through the nurses' notes.

TO THE ACCOUNTING OFFICE: The accounting office is relieved of posting hundreds of individual charges to patients' bills. Also, they can be assured that all income from dispensing drugs is being recorded as the Medications Sheet is an integral part of the patient's chart and the nurse must record all drugs administered.

Other Pertinent Data

Usage of the Medications Sheet form necessitates education of the physician not to write over the sheet as his writing appears on the pharmacy's copy (the carbon).

The nurses must also be informed as to proper usage of the form. Any Medications Sheet forms which are illegible when received by the pharmacy for pricing are returned to the nursing unit to be rewritten. When floor stock is being revised, the pharmacist must confer with the nurses to obtain floor stock as uniform as possible to facilitate rapid pricing.

The Mountainside Hospital is a 435 bed general hospital and maintains an active outpatient department. The pharmacy staff consists of a Director of Pharmacy, Assistant, one relief pharmacist (three days per week), a clerk-secretary, a pharmacy helper and a porter. Both the clerk-secretary and the helper have been adequately trained to price the Medications Sheet.

Conclusion

Larger floor stock may seem to indicate relaxation of drug control. This system has been in effect in our hospital over a year and various control studies made by the pharmacy and accounting departments indicated little or no drug loss. With larger floor stock, hoarding of special medications after a patient is discharged and use of these medications for another patient is eliminated. Certainly without larger floor stock, pharmacy personnel would have to be increased to handle the work load of individual requisitions.

Pharmacy Participation In AHA's 63rd Annual Meeting

Atlantic City, September 25-28

► THE FORMULARY SYSTEM IN HOSPITALS was given attention at the Annual Convention of the American Hospital Association held in Atlantic City on September 24-28. This session, designed particularly for those concerned with the formulary system, was one of the forty program sessions meeting throughout the week. With Dr. Joseph E. Snyder, assistant vice president, the Presbyterian Hospital, Columbia-Presbyterian Medical Center, New York, serving as chairman, the discussion was concerned chiefly with what *can* be done and what *cannot* be done under the formulary system in hospitals. Further discussion centered around the advantages and results to be obtained by using a formulary as well as organization of the pharmacy and therapeutics committee. Other participants included W. Kevin Hegarty, administrator, Greater Bakersfield Memorial Hospital, Bakersfield, California and Joseph A. Oddis, executive secretary, AMERICAN SOCIETY OF HOSPITAL PHARMACISTS, Washington, D. C.

The ASHP, in cooperation with the Division of Hospital Pharmacy of the American Pharmaceutical Association, also had a booth as part of the 500 exhibits shown at the A.H.A. Convention. Depicting the services of the two organizations, again much interest was shown in the *American Hospital Formulary Service* which is available on subscription through the SOCIETY. With Mr. Oddis and Mr. George Provost, secretary of the AHFS, attending the booth throughout the week, growing interest in the various areas of hospital pharmacy practice was evident. Also, much interest was shown as the result of the program session devoted to hospital formularies which was held on Thursday.

Total attendance at the A.H.A. Convention reached more than 13,000 persons representing nearly every area of hospital service. A highlight of the meeting was installation of Dr. Jack Masur, director, Clinical Center, National Institute of Health, Bethesda, Maryland, as President of the American Hospital Association. In his acceptance speech, Dr. Masur developed significant "Goals for American Hospitals." He outlined these goals as follows:

1. To achieve improved public understanding of the higher cost of better hospital care.

2. To attain through regionalization a more effective approach to the responsibilities of planning and operation of all hospitals by voluntary and governmental agencies.

3. To integrate the concept and practice of rehabilitation as a component of adequate care.

4. To develop a dynamic program for the health care of the aged.

5. To extend existing accreditation programs and to activate new types of approval programs.

6. To encourage the integration of psychiatric services in general hospitals.

7. To increase the availability of benefits and services for ambulatory patients.

8. To foster the development of group practice, in relationship to hospital care.

9. To implement more fully the concept of home care for long-term patients.

10. To accelerate research in hospital planning, design, and management.

11. To support the expansion of programs of continuing education, particularly for practicing physicians.

12. To improve the preparedness of hospitals for mass casualties.

13. To participate more fully in international efforts for the betterment of hospital activities in other countries.

In concluding Dr. Masur pointed out that our most exalted goal always has been and always will be, in the words of an old French saying:

"To cure, sometimes
To help, often
To console, always."

a method of preparing STERILE HEMIACIDRIN SOLUTION

by
ROBERT P. CHANDLER, M. THOMAS WAGNER, JR.
and ARTHUR W. DODDS

► RECENTLY, THE UROLOGY SERVICE at the United States Public Health Service, Staten Island Hospital, wished a 10 percent sterile solution of hemiacidrin* to be used for bladder irrigation to alleviate certain urologic conditions. A clear sterile solution was prepared by dissolving the powder in distilled water by agitation, allowing the effervescence to cease, filtering and autoclaving at 250° F. In view of the fact that some difficulty was experienced in the preparation of this solution, it was felt that the experience gained on hemiacidrin at this station might be of interest to others.

Hemiacidrin is a white powder consisting of buffered citric, gluconic, and malic acids heated to form their respective lactones and then partially neutralized. The resultant product is a mixture of the acids, their lactones, anhydrides, and salts, deprived of irritating qualities and toxic effects.[1] An active effervescence is produced when the powder is dissolved in water prior to use. The *p*H of a 10 percent solution is approximately 3.88. Excellent solvent properties for calcium carbonate and calcium phosphate are exhibited.[2]

The stability of hemiacidrin powder is considered by the manufacturer to have an indefinite shelf life. The sterile solution may be used with confidence as long as it remains clear to cloudy. The presence of a heavy precipitate may indicate decomposition of the solution. It is suggested that no more than a week's supply be prepared at one time.

A sterile 10 percent solution has recently been used by Mulvaney[2] by instillation into the bladder or kidney

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*Hemiacidrin is supplied under the tradename of Renacidin by the Guardian Chemical Corporation of Long Island, New York.

pelvis to dissolve or soften urinary calculi of certain types. Also, the solution may be used to prevent calcification of in-dwelling catheters.

Preparing sterile solutions of guaranteed concentration is not a simple matter. After the powder has been placed in water and the effervescence ceased, a fine colloidal precipitate is formed. This precipitate is believed to be a complex citrate.[1] Filtration is required to remove this precipitate, as well as any other particulate matter which may be present.

Although the product is supplied as a sterile powder by the manufacturer, preparation of a sterile solution by aseptic technique, using sterile purified water, appears to embrace a possible chance of interrupting sterility. This is primarily due to the necessary steps involved in allowing effervescence to go to completion before the container is capped. Also, some difficulty may be encountered in bringing the solution to volume aseptically.

Terminal sterilization by autoclaving appears to be the method of choice in preparing a clear sterile solution. The advantages are that the container does not need to be capped until effervescence is complete, and elevated temperatures apparently do not adversely affect the solution.[1]

Using terminal sterilization, a sterile solution may be prepared by adding the powder in divided portions to purified water in a suitable vessel. After effervescence has ceased, the solution should be brought to volume with purified water and filtered into a container. The solution is then autoclaved at 250-254° F. for 45 minutes.[3] It was found from our studies, that using a standard 2000 ml. autoclavable flask, a 5 percent excess in volume is required to give the correct final volume at this temperature and time.

In an effort to determine any changes occurring by dissolving the powder in purified water, filtering, and autoclaving, several rough determinations were done.

The *p*H of the solution was determined using the Beckman *p*H meter before and after filtering and before autoclaving. Before and after filtration and before autoclaving, the *p*H was found to be 3.85. After autoclaving, the mean *p*H of five samples of solution was found to be 3.88. The change in *p*H due to autoclaving would seem to be slight.

The loss in weight due to effervescence and filtration was determined. The contents of one 300 Gm. bottle were slowly added in divided portions with agitation to sufficient purified water to make 3000 ml. The weight of the container and water was 3325 Gm., and the weight of the container plus solution after effervescence was 3585 Gm. By subtraction, the weight of active ingredient was 260 Gm., or 40 Gm. of the 300 Gm. were lost as a result of effervescence. After the solution had been filtered, 100 ml. were evaporated to dryness. The residue was found to weigh 9 Gm. The loss due to effervescence and filtration was found to be 1 percent, by rough determination.

The loss in volume as a result of autoclaving was determined. After the solution had been made and filtered, 100 ml. were found to weigh 107.5 Gm. After the solution had been autoclaved at the temperature and time previously stated, 100 ml. of solution were found to weigh 108 Gm. This represents an approximate 0.5 percent increase in concentration, since the loss is assumed to be water only.

The change in volume of five samples of 300 ml. each was determined. After autoclaving, the mean volume loss of the five samples was found to be 15.8 ml. This corresponds to a 5.3 percent change in volume, and may be extrapolated to a 0.53 percent change in concentration. Therefore, by the somewhat crude yet practical determinations, 5 percent additional water should be added prior to autoclaving.

Sterile solutions of hemiacidrin should be prepared by terminal sterilization. This method of sterilization does not appreciably alter the *p*H of the solution, and the change in concentration due to autoclaving would seem to be insignificant by the crude methods used. However, it is recommended that 5 percent additional water should be added prior to autoclaving.

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3. Perkins, John T.: *Principles and Methods of Sterilization*, 1956. Charles C. Thomas Publishing Company, Springfield, Ill.

Bureau of FIP meets in Athens. Shown left to right are H. Krause (Germany), Sv. A. Schou (Denmark), Dr. Winter's secretary, J. H. M. Winters (Holland), FIP President Sir Hugh Linstead (Great Britain), M. Guillot (France), D. Francke (U.S.A.), and R. Vandenbulcke (Belgium). Absent at the time of photograph: F. Arnal (France), and J. Birza (Holland)

International Pharmaceutical Federation Council Meets In Greece

► THE COUNCIL OF THE FÉDÉRATION INTERNATIONALE Pharmaceutique (FIP) met in Athens, Greece 12-15 September to review and discuss current activities of the Federation and to lay plans for the coming General Assembly scheduled for Vienna, Austria 1-7 September 1962.

Sir Hugh Linstead of Great Britain, president of the FIP, presided over the sessions which were attended by representatives from 29 countries. Dr. William Apple, the official delegate of the American Pharmaceutical Association, cabled his regrets that the pressure of Association business prevented his attendance. Dr. Don E. Francke, Editor of the AMERICAN JOURNAL OF HOSPITAL PHARMACY, participated as Vice President of the FIP and a member of its Bureau (Executive Committee).

At a ceremony held at the University of Athens, the Council was welcomed by Mr. Stratos, the Minister of Social Welfare, Mr. A. Tsoukalas, the Mayor of Athens and Mr. A. Tsitsonis, the President of the Panhellenic Pharmaceutical Association. During his response, Sir Hugh Linstead spoke of the contributions of Greek drama, literature, and philosophy to the world. He recalled that scientific medicine began with Hippocrates and his insistence on the experimental method. While Aesculapius was the traditional god of medicine, it was Hippocrates and Aristotle who dispersed the mists of mysticism and nature-worship and laid the foundation of a system of medicine which endured until the 16th century. The influence of Greece on medicine remains deeply rooted in the scientific nomenclature of disease.

At the close of the Council meeting Mr. A. Tsitsonis spoke on Pharmaceutical Practice in Greece. His address will be found on page 659. Members of Federation's Bureau were presented with a certificate of honorary membership in the Panhellenic Pharmaceutical Association. The Panhellenic Pharmaceutical Association served as hosts to the Council and arranged

tours to the Acropolis, the archaeological museum and other points of interest in Athens, a boat trip to several Greek islands, and other events.

During the meeting, plans were laid for the General Assembly of the FIP in Vienna 1-7 September 1962. The Vienna meeting will mark the 50th anniversary of the founding of FIP.

Meetings Of Sections

Dr. Franz Linner (Austria), president of the Section of Hospital Pharmacists, reported his section's plans for the Vienna meeting. The program will treat in detail the problems of the preparation of medicaments in hospital pharmacies. In view of the continuous rise in amount of money spent by hospitals for drugs, the hospital pharmacists will discuss ways and means by which these costs may be reduced through production of medicines within the pharmacy. Particular emphasis will be placed on the preparation of sterile medicaments, including the use of plastic containers for infusion solutions. Economic considerations of these problems will also be discussed. Mr. Herbert Grainger of Westminster Hospital, London, is Secretary of the Section.

The Section of Military Pharmacists will discuss four main topics in Vienna: (1) substances used for prevention and treatment of the effects of poison gases, (2) plasma substitutes, (3) the protection of medical supplies against radiation, and (4) problems which industrial pharmacy in Yugoslavia might face in time of war. President of the Military Section is Colonel Alm of Sweden; Colonel Reusse of France is Secretary; Colonel Aabel of the U. S. is a Vice President.

The Scientific Section, under the Presidency of Professor Guillot of France, has arranged for a symposium on gas chromatography. Professor Ruyssen of Ghent will also report the results of his committee's work on the standardization of enzymes, which is being carried out in collaboration with experts of the World Health Organization.

The Commission of Secretaries of Pharmacopeias, with Mr. T. C. Denston of Great Britain as Chairman, will discuss the development of a comprehensive code of guiding principles for the acceptance of nonproprietary names. It was agreed that all who are concerned with the establishment of nonproprietary names should be encouraged to work in close collaboration with W.H.O. so as to ensure the acceptability of the names for international use. It was recommended that a joint meeting to discuss guiding principles for nonproprietary names be arranged with the Industrial Section representing the drug producers. There will also be a discussion of the application of modern instrumental methods of analysis to drugs.

The Section of Medicinal Plants will discuss the assay and standardization of non-toxic drugs. The traditional botanic excursion will also be organized.

Other sections which are arranging programs for the Vienna meeting include the Industrial Pharmacists, Press and Documentation Section, and the Directors of Control Laboratories. Chief Pharmacists of the Ministry of Health of various countries will also meet and exchange views. This program is being arranged by Mr. Harold Davis, chief pharmacist of the British Health Ministry. The Union Mondiale des Sociétés d'Histoire de la Pharmacy will also hold meetings.

Members of the Council of the FIP listen to welcoming speeches at the University of Athens

In Athens, members of the FIP Council visit the Acropolis

FIP members attending the 1962 Congress will see this view of the Tower of Vienna's Town Hall

General Assembly

In addition to meetings of the various sections, there will also be several general sessions at which all participants will assemble. The opening session will be held in the halls of the Vienna Musical Society and will include a program by the Tonkünstler Orchestra of Vienna, welcoming speeches by government officials, and the chairman of the Organizing Committee and an address by FIP President Sir Hugh Linstead. Other speakers for the General Assembly are being selected.

The Commission on the General Practice of Pharmacy will conduct an open meeting dealing with the supply of pharmaceutical preparations through non-pharmaceutical channels. The Commission has gathered carefully documented evidence which shows that many relatively simple medicines have been responsible for untoward effects which are more prone to occur when the medicaments are distributed by non-pharmacists. Mr. Frank Arnal, president of the Commission, has requested representatives of national associations to send their views and suggestions regarding this subject to him at 4, Avenue Ruysdaël, Paris 8, France, so that they may be incorporated in the report to be presented in Vienna.

At the General Assembly there will also be a discussion of the objectives of pharmaceutical education. In preparation for this discussion, a group representative of all sections of the FIP have met to discuss a preliminary report on this topic prepared by Dr. Steiger, secretary of the Scientific Section. The points of view expressed have been blended into a revised report which will serve as the basis of discussion in Vienna. The report states that in every country the training of the pharmacist should be such as to permit the holder of the basic pharmaceutical degree to make a career in any branch of the profession, including general practice, hospital pharmacy, industrial pharmacy, military pharmacy, colleges of pharmacy, research and control laboratories, etc. Studies should include training in elementary anatomy and physiology and more advanced training in pharmacology to prepare the pharmacist for his role as a consultant. The student should also receive training in analysis and pharmaceutical engineering. Courses in physical pharmacy and chemistry and related sciences should prepare him well to manufacture and control pharmaceutical products. The student should be trained in statistics to the degree that he can plan experimental work and interpret the results. He should have a foundation of knowledge in economics, social and administrative areas. Provision should be made for graduate studies for pharmacists desiring to specialize. Post-graduate refresher programs to keep pharmacists abreast of new developments are a part of the educational needs.

Following the F.I.P. meeting in Vienna, the Italian Society of Hospital Pharmacists will hold a Congress of Hospital Pharmacy in Milano, Italy. The dates and program have not yet been announced.

Among the special events thus far planned for the Vienna meeting are a reception at the Vienna City Hall, a ceremony at the War Memorial, a performance of the Opera, and a Congress Ball. Special tours and other events for the ladies are being arranged.

Membership in the International Pharmaceutical Federation is available to pharmacists who are members of the American Pharmaceutical Association. Annual dues are $3.00 and may be sent to Dr. Don E. Francke, University Hospital, Ann Arbor, Michigan. Members receive the quarterly *World Journal of Pharmacy* as part of their membership benefits.

pharmacy practice

IN GREECE

by ALEX. TSITSONIS

► ON THE OCCASION OF THE MEETING of the Council of the International Pharmaceutical Federation in Athens, I have considered it expedient to give its members some information regarding the practice of the pharmaceutical profession in Greece.

Pharmaceutics, as an essential part of the art of healing has at all times been honored and cultivated in Greece. If we revert to mythology and legend, we find god and semi-god therapists and, therefore, pharmacists. These are Akesius, Apollo, Sotira, Artemis, Athena, Circe, Medea, the good-natured Centaur Heron for whom it is said that he has been Aesculapius' teacher, and many others. Then comes the great personality of Aesculapius, God or deified mortal, Hygeia, Iasso or Akesso, Panacea, Podalirius and Makhaon, to mention a few names at random.

During the historic period many personalities inspire our admiration either as forerunners or as physician-pharmacists. It would be enough to mention Hippocrates and Galen who lent his name to a whole branch of our science, and also Dioscoridis, although it would be unfair to confine myself to these names only while a pleiad of wise men has adorned the scientific pharmaceutical field for centuries until the fall of Constantinople.

However, I do not intend to relate here the history of pharmaceutics. What I have said is mainly intended to stress the contrast between such scientific boom and the decline which followed when the country fell into slavery. But already our science is developing in the West with new vigor and bringing the fruitful results we know. In Greece the first scientific pharmacies appeared in the Ionian islands, founded during the Venetian occupation by pharmacists coming mostly from the famous Italian schools. Later on, pharmacists were educated in the Ionian Academy, a University Center established in 1823 and operating until 1865 when the islands were united with Greece. It is also in the Ionian islands that appeared the first regulations for exercising the profession modeled in the clauses in force in Venice.

In continental Greece pharmaceutics was practiced by physicians or by empiricists and this went on for a while even after 1838 when the University of Athens was established.

Greek Pharmacy Today

Today the pharmaceutical profession is practiced under conditions not differing essentially from those existing in all advanced countries. There are pharmaceutical sections in the schools of Physics and Mathematics of the Universities of Athens and Salonica. The duration of studies is four years. Graduate pharmacists should complete a year of practical training before taking examinations before a Committee of University Professors and members of the Supreme Council of Public Health in order to obtain their license.

Pharmacists in Greece have not yet been divided into specialized categories.

The right to establish a pharmacy belongs only to scientist pharmacists on condition that they are granted a special license by the Ministry of Public Welfare.

The number of pharmacies is limited according to the population. A distance of at least 50 metres must separate two pharmacies in the same town.

Conditions governing pharmacies from the point of view of installations, supplies and operation, have been regulated by decrees.

ALEX. TSITSONIS is President of the Panhellenic Pharmaceutical Association.

Presented before the Council of the International Pharmaceutical Federation meeting in Athens, Greece, 13 September 1961.

Members of the FIP Bureau were presented certificates of honorary membership in the Panhellenic Pharmacy Association. Here Mr. A. Tsitsonis presents a certificate to Dr. Don E. Francke (U.S.A.)

In addition to private pharmacies, a number of pharmacies is also operating in some state hospitals and medical establishments belonging to public organizations. The latter, however, must be directed by scientist pharmacists and have no right to sell medicines to the public.

Mass production of pharmaceutical products and specialities is made in factories or laboratories having special licenses granted on approval of the Supreme Council of Public Health. There is no limit to the number of these establishments. Their owners may be persons foreign to the profession but the responsible managers must be scientist pharmacists or chemists.

Wholesale trade of medicines is done through stores which are necessarily managed by scientist pharmacists. The number of these stores is limited according to the population.

Imported specialities as well as those manufactured in Greece cannot be put on the market before being approved by the Ministry of Public Welfare. Such approval is granted upon proposal of the Supreme Public Health Council where the interested firm must state the precise composition of the product, submitting also the method of checking it, together with a bibliography proving its therapeutic qualities.

The trade of medicines is subjected to many restrictions.

Wholesale and retail prices are fixed by a special Advisory Council of the Ministry.

Retail prices must be printed on the outer packing of the medicine. Also an official price is fixed for all medicines sold by pharmacies.

All establishments manufacturing or selling medicines are under state control. Control is exercised by pharmacy inspectors.

Professional Discipline

Professional organization of pharmacists is represented by their regional pharmaceutical associations established by law in 1928. These associations ensure the respect of professional rules in force for pharmacies. They are also checking applications of prices fixed by the state and acting as arbitrators in differences among their members. Moreover, they sign collective contracts for the supply of medicines to the various health funds and to the Social Insurance Fund.

Elected Disciplinary Councils in these regional associations may inflict penalties on members violating professional regulations.

The Panhellenic Pharmaceutical Association is the

highest professional organization in the country. All regional associations participate through their representatives.

The Panhellenic Pharmaceutical Association supervises all regional associations and ensures their operation. It defends their professional and moral rights, draws up their Code of Ethics, represents pharmaceutics before public authorities and welfare organizations and submits proposals to the Ministry of all questions connected with the profession. The aim of the Association is to compromise in the best way the interests of the pharmaceutical profession with those of public health. Finally, the Association has a Supreme Council which opines on appeals made against sanctions imposed by regional disciplinary Councils.

The President of the Panhellenic Pharmaceutical Association is a member of the Supreme Council of Public Health and of the Advisory Council for Medicines.

The Panhellenic Pharmaceutical Association embraces all shop-owner pharmacists but according to the law of 1946 pharmacists who are not owners of shops may attend assemblies. Therefore, the Association is the representative organization of the entire profession.

Problems

Pharmaceutics in Greece, as in every other country, is facing difficult problems. The most serious among them is that the trade is going into the hands of persons foreign to this profession.

In the first place we have the question of physicians who have a limited right to sell medicines. The distance of five kilometres from the nearest pharmacy provided by the law in this connection is quite inadequate with the present means of communication. As a consequence a number of physicians equal or even greater to that of owners of pharmacies are carrying out illicit competition.

In addition to this loss of business there is another equally serious question. As everywhere physicians are supplied with a profusion of samples distributed to them by way of advertisement and in spite of all measures taken, a great number of these samples find their way to the market.

These factors and many others, perhaps of lesser importance, result in impoverishing the pharmacist. This financial depression in spite of penalties imposed now and again, fatally leads to competition among pharmacists, and though such competition is not generalized is nevertheless a great danger for the profession as well as for public health.

Pharmaceutical associations with the Panhellenic Pharmaceutical Association at their head are struggling insistently and continually to redress the situation, but we must admit that the results of this struggle are far from satisfactory.

A Plan Of Action

In view of this situation the speaker has studied and presented a plan which might help to face the immediate dangers threatening the profession and would allow the necessary time to achieve more radical solutions.

According to this plan pharmacists in every town would establish economic cooperation in the form of a company. Thus, the number of pharmacies would be reduced by half. At the same time, efforts would be made to distribute the remaining pharmacies in such a manner that the reduction should not in the least affect the interests of the public.

Moreover, such interests would be served better since the remaining pharmacies would be better supplied, would have more personnel, and would work under more favorable conditions from a scientific point of view for the good of public health. This system is already in effect in 11 towns with excellent results. It is easy to understand that decrease of general expenses and greater facility of movement from an economic point of view have brought considerable relief to pharmacists while the spirit of solidarity and cooperation among them has been strengthened. It should also be said that both the medical profession and the public have been satisfied with this measure everywhere.

According to my information a similar system exists in the Scandinavian countries. If this system is applied generally, I dare say that a great step will be made towards solving the immediate problems which are preoccupying us.

This is the general outline of the situation of the pharmaceutical profession in Greece. I must insist on the fact that the difficulties which we are experiencing here are more or less of the same nature and proportions as those in other countries. Many things have changed since the time when nearly all pharmaceutical activity was confined to the laboratory of the pharmacy. It would suffice to mention the growing avalanche of specialities. And it is not only this.

I am firmly convinced that if the practice of the profession has changed form, the substance has remained the same. As long as there are diseases there will be medicines and, therefore, pharmacists.

The principle which is the key to the solution of our problems, in the interests of public health and of the profession, may be summed up in the following words: "Remove from medicines every person foreign to them and let medicines remain to the pharmacist only." The efforts of pharmaceutical organizations all over the world, with the International Pharmaceutical Federation at their head, should tend in this direction.

As strength lies in unity, these efforts should finally merge into one and be ratified by an international agreement signed by all Governments.

BOLLETTINO CHIMICO FARMACEUTICO

100th Anniversary

by W. Kenneth Fitch

► I FEEL VERY HONORED AT BEING ASKED to say a few words on this great occasion. There may be certain reasons, possibly good reasons, for your choice of speaker. If so, I am not aware of them, in spite of what you, Mr. Chairman, have been kind enough to say. Many of our colleagues who occupy the editorial chairs of national pharmaceutical periodicals would welcome the opportunity of standing here and congratulating the *Bollettino Chimico Farmaceutico* on gaining its centenary and of saying to its distinguished editor that under his guidance, its prestige has continued to rise. Let me, therefore, on their behalf, on behalf of this audience, and on behalf of the world-wide community of pharmacists, pay tribute to one of the outstanding pharmaceutical periodicals of our time.

First, it is relevant to enquire into what sort of world the *Bollettino* was born. Italy was far from being the united, peaceful country which we know and love today. There were wars, some successful, some unsuccessful; there were alliances, and misalliances; Sardinia and Milan did not see eye to eye; Venice was coveted by Italy, and, as to-day, by the rest of the world. The national budget had a deficiency of 344 million lira. Garibaldi and his Thousand volunteers were on the war-path. Dumas occupied the chair of chemistry at the Sorbonne; Cannizzaro, whom we recall for his elucidation of Avagadro's hypothesis, was serving with Garibaldi; only five years had elapsed since the first synthetic dye had been prepared; Pasteur had started on the investigations which led to his classical discoveries; Hugo Schiff, whose reagent is still in use, was a lecturer in chemistry here in Pisa; Justus Liebig was professor of chemistry at Munich; 1861 was the year that Gowland Hopkins, the discoverer of vitamins, was born; dynamite had not been discovered, and Kékulé had not enunciated his molecular theory. Much had been done in the science of pharmaceutical chemistry, but there was and (still is) much more to do.

And now the *Bollettino* takes its place among those journals which have served pharmacy for at least 100 years; the *Annales Pharmaceutique Françaises,* which I believe can trace its history back to 1797; the *Archiv der Pharmazie,* first published in 1822 as the *Pharmaceutische Monatsblätter;* the *American Journal of Pharmacy,* which was born in 1825 as the *Journal of the Philadelphia College of Pharmacy*; *Liebig's Annalen der Chemie,* which was founded in 1832; *Chemisches Centralblätt,* which in 1844 had a pharmaceutical instead of a chemical title; the official organ of the Pharmaceutical Society of Great Britain, *The Pharmaceutical Journal,* which was born in 1841; the *Archiv for Pharmaci og Chemi,* first published in 1844; the *Pharmazeutische Zeitung,* which started in 1856; *Revista Farmaceutica,* founded in 1858; the *Pharmazeutische Zentralhalle für Deutschland,* which was born three years later; another British journal, the *Chemist and Druggist,* which began in 1859; and the *Deutsche Apotheker-Zeitung,* which celebrated its centenary on June 29 last. Today, I have a list of several hundred periodicals connected with pharmacy, and, so far as I am aware, only the eleven which I have mentioned, plus your own, are centenarians. According to the British journal, *Nature,* there were only 10 scientific journals in the world in the year 1750, 1000 in 1850,

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W. Kenneth Fitch is Publications Manager of the Pharmaceutical Society of Great Britain and former Editor of *The Pharmaceutical Journal.*

Presented at a special session of the FIP's International Congress of Pharmaceutical Science in Pisa, Italy 13 September 1961, held to commemorate the centenary of the *Bollettino Chimico Farmaceutico,* the Italian Journal of Pharmaceutical Chemistry.

10,000 in 1900, to-day about 100,000, and in the year 2000 we shall probably have reached a million. One of them, I am sure, will be the *Bollettino*.

How has the *Bollettino* measured up to the exacting requirements of a journal for pharmacy? It is perhaps natural that I should be reminded of the centenary of our own *Pharmaceutical Journal* and of the fact that it was started as a private venture by one of the founders of the Pharmaceutical Society of Great Britain, Jacob Bell. When Bell died in 1859 he left the copyright of the journal to the Society, with this charge—"It is particularly important that *The Journal* should not fall into the hands of any person or persons who might make it a matter of business from personal interest. Three departments must be represented: chemical and pharmaceutical, materia medica and botany, and the shop." If, in place of "materia medica and botany," we substitute "pharmacology and pharmacognosy" and in place of "the shop" we substitute "pharmacy," it can be claimed that for a hundred years the *Bollettino*, like the *Pharmaceutical Journal*, has closely observed Jacob Bell's charge.

I believe it is immoral for a pharmacist—a person accepted by the State and by the public as someone whose primary concern is the health of the people—to fill his windows with goods which bear no relationship to pharmacy. It is just as immoral for a pharmaceutical periodical to fill its pages with non-pharmaceutical material. It is immoral for a pharmacist to put in his windows or display on his counter medicines which, by his training, he knows are promoted by advertising based on pharmacological inexactitudes. It is just as immoral for a pharmaceutical periodical to publish papers, articles or reports which have not been adequately sifted and for which insufficient supporting evidence is available.

This is something of which the *Bollettino Chimico Farmaceutico* can never be accused. I have seen and studied nearly every issue since 1930—that is 16 years longer than you, Professor Gallo, have been its director—and every issue has faithfully fulfilled the requirements of its title. Unquestionably it has been and is a bulletin of pharmaceutical chemistry, the science which forms the very basis of pharmacy.

But it has done more than that. A journal that merely keeps in step with current affairs can rarely inspire its readers. Especially in science is it necessary for a periodical to be in the van of progress—if it is in front of the leaders so much the better. Your journal has been an inspiration to at least three generations of pharmacists and it has played a large part in stimulating recent developments in the Italian pharmaceutical industry—developments of which you are justly proud.

And so, my dear Gallo, I ask you to accept a small memento of this important anniversary. It seemed to me that it would be appropriate to offer to you a condensed history of world events at the time of the birth of the *Bollettino*. Here it is—the 1861 volumes of *Punch*, the British journal of humor. And if you find in them a mild lampooning of the Italian regime, do not be dismayed or hurt, for *Punch*, like your own journal, has always assumed the right, without fear or favor, of viewing, through spectacles that neither magnify nor embellish, prince and peasant, country and concept.

We have a saying in Britain, "*Punch* is not as good as it was." Perhaps the saying also applies to pharmaceutical periodicals. And when your turn comes, and you hand over control of the *Bollettino* to your successor, someone is bound to say, "The *Bollettino* is not as good as it was." We, who are growing old in the service of pharmacy, won't believe it, but it will be a consoling and compensating thought for the years of blood and sweat and toil that you have put into its production.

I will conclude by re-quoting and I hope re-emphasizing a sentence which appeared in the first issue of the *Bollettino* for 1961, "Recte facti fecisse merces est," the reward of the thing rightly done, is to have done it. This is something which I am sure you have experienced.

NATIONAL PHARMACY WEEK

Observed at Albany Medical Center

by Louis P. Jeffrey
and Kenneth H. Fish

Visitors attending open house view activities in the Pharmacy

Letter received from Medical Director of Hospital

ALBANY MEDICAL CENTER HOSPITAL
Albany, New York

AFFILIATED WITH ALBANY MEDICAL COLLEGE OF UNION UNIVERSITY

AFFILIATED WITH ALBANY MEDICAL CENTER SCHOOL OF NURSING

October 6, 1961

Mr. Louis Jeffrey
Pharmacist-in-Chief
Albany Medical Center Hospital
Albany, New York

Dear Mr. Jeffrey:

From what I have observed and heard, I feel that you and your Pharmacy staff and Solution Room staff should be highly complimented on the successful Open House which you held on Wednesday, October 4, 1961. The Pharmacy looked very good. The exhibits were attractive and informative. I might add that the instruments and equipment must have been quite impressive to most of the visitors.

In addition, I would like to compliment you on the fine exhibit which your staff prepared and has displayed in recognition of National Pharmacy Week.

Sincerely yours,

F. Haase Jr.

Ferdinand Haase, Jr., M.D.
Medical Director

FH/ih

► PHARMACISTS AT ALBANY MEDICAL CENTER, Albany, New York, started planning for the observance of National Pharmacy Week several months ago. In the past, it had been our custom to create a display and use this as a means of promoting the profession of pharmacy to visitors, patients, and employees in the Medical Center. We felt that although this was adequate, it could be improved. Thus, after careful planning, five separate programs were developed to publicize and promote the profession of pharmacy in a hospital and thus to the community.

Pharmaceutical Display

A committee of three pharmacists was appointed by the chief, to assist in the developing of a display. This was to be the main feature of our exercises for the week. This Pharmaceutical Display was set up in a prominent place on the main floor of the hospital where there is a great deal of traffic. In this manner, we could create the greatest impression upon the public and our employees.

The theme, utilized in the display, centered around the slogan established by the American Pharmaceutical Association—"Your Life May Depend On This Order." The center panel depicted the theme of the display and each side panel contained three shadow box type pictures. The background and sketches were original creations and portrayed various services which the pharmacist renders while fulfilling his professional health service responsibilities. The sketches presented a story, and the features of this story were exemplified by various pieces of equipment, supplies, books, and periodicals, on the lower portion of the table. The color scheme employed in the composition of the display emphasized red, white, and black, while the entire area was highlighted by a golden hue spotlight.

The display was viewed by the 2,000 employees of the Albany Medical Center. In addition, several thousand relatives, visitors, and patients, absorbed the message which we were presenting and seemed to appreciate and enjoy it.

Louis P. Jeffrey is Pharmacist-in-Chief and Kenneth H. Fish is Staff Pharmacist, Department of Pharmacy, Albany Medical Center Hospital, Albany, New York.

Open House

On Wednesday, October 4, the Department of Pharmacy conducted Open House. More than 1,000 invitations were distributed and mailed, announcing the event. The attendance was overwhelming! Approximately three to four hundred people, including administrators, physicians, nurses, technicians, educators, community practitioners, representatives from law enforcement agencies, pharmacists from area hospitals, and other hospital personnel came to examine the facilities of the Department. A vast array of manufacturing equipment, actually in operation with typical examples of products compounded, was impressive and of interest to all. Products compounded with this modern equipment and utilizing new techniques, proved to be a revelation to many of the professional people touring the Department. In addition, questions concerning policies and procedures, personnel, space, facilities, and other matters, were freely discussed in a relaxing atmosphere. A great deal of interest was shown by all the visitors and many were enlightened by the new messages they had received. A Guest Book was used to allow the guests to register and to record their visit during this special occasion. During Open House, refreshments were also served to add to the cordiality of the affair.

Pharmaceutical Drug Exhibit

On Thursday, October 5, a Pharmaceutical Exhibit was held in the House Staff Lounge. Six pharmaceutical companies set up exhibits and displayed simultaneously. The exhibits were colorful and the new products were interesting to the many physicians and some pharmacists who attended. This event was the climax of a week, highlighted by events, centered around the profession of Pharmacy.

Other Activities

The Department of Pharmacy regularly publishes a Pharmacy Newsletter. In order to commemorate the occasion of National Pharmacy Week and Open House, a special edition of the Pharmacy Newsletter provided a front page story announcing the event and inviting personnel to visit the department.

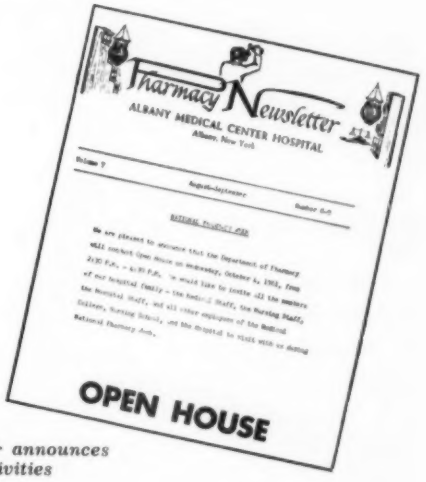
In addition, a display was set up within the Pharmacy which could be viewed from the waiting area where patients and employees conduct their relationship with the Department. The professional decor of the display related a message in conformance with the theme of National Pharmacy Week.

Summary

National Pharmacy Week is an exciting time. Everyone of the members of the Pharmacy Staff and the personnel of the Medical Center, became involved. Each member was assigned a task. The preliminary work and behind-the-scenes effort associated with the Pharmaceutical Display provided the impetus necessary to spark the interest in the members of the Department. The Open House activities provided a stimulation to the staff members to promote the profession of Pharmacy. The Pharmaceutical Drug Exhibit was designed to create a further impression on the other members of the health team; primarily the physician, in a manner which is in keeping with the standards of the profession. The overwhelming attendance and success of the entire event provided an inner satisfaction which will stimulate a staff to perform in the same manner for the next fifty-one weeks of the year. The members of the department will long remember an event of this type. The other departments of the hospital will be impressed by your Pharmacy regardless of the extent of your activities and many people will be grateful for what you have done.

Why not plan now for National Pharmacy Week in 1962? It is a public relations program which the profession can use now, and really needs in all of its segments, to create the proper image of the profession.

The authors wish to acknowledge the assistance of Fay Peck, Jr., Michael J. Loudis, and the other members of the Pharmacy Staff in this program.


Pharmacy Newsletter
ALBANY MEDICAL CENTER HOSPITAL
Albany, New York
OPEN HOUSE

Pharmacy newsletter announces Pharmacy Week Activities

Pharmacy display emphasizing the theme of National Pharmacy Week—Your Life May Depend on this Order

Therapeutic Trends

edited by WILLIAM JOHNSON, *Bronson Methodist Hospital, Kalamazoo, Michigan*

Single-Dose Piperazine Preparation For Enterobiasis

Thirty patients, all of whom were shown by anal swabs to have enterobiasis, were treated with a preparation combining piperazine and a purified extract of the senna pod. The parasites were successfully expelled with a single dose of the preparation in 28 cases (93.3 percent).

Eidal *et al.* point out in the *J. New Drugs 1*:122 (May-June) 1961 that the two failures were successfully treated with a second dose of the preparation. The amount of piperazine ingested in the single-dose treatment was a fraction of the total employed in multiple-dose therapy with piperazine alone. The preparation's effectiveness, ease of administration, saving of time and materials, and lack of significant side effects, would appear to make it a valuable agent for single-dose treatment of enterobiasis. This preparation was supplied as Pripsen by the Purdue Frederick Company.

SYLVIA SCHMIDT

Chlorothiazide Derivatives For Diabetes Insipidus

Intravenous chlorothiazide, given either as a single 500 mg. dose or as a constant infusion of approximately 1 mg. per minute, increased urine volume and water clearance/insulin clearance ratio in one patient with acquired and one with nephrogenic diabetes insipidus. In two patients with acquired diabetes insipidus and in one with nephrogenic diabetes Insipidus, orally administered hydrochlorothiazide caused a reduction of urine volume to one-third to one-half of control values. Urine osmolality increased significantly but never became isosmotic with plasma. The reasons for the difference in action of the intravenously and orally administered compounds are not apparent.

The place of chlorothiazide and its analogs in the treatment of acquired and nephrogenic diabetes insipidus remains to be established. Unlike vasopressin, it does not result in the production of hypertonic urine, and furthermore it entails the risk of causing depletion of body potassium in addition to its other documented toxic effects. These drugs may be tried in selected cases of vasopressin-resistant diabetes insipidus or in cases where pituitary snuff is poorly tolerated or ineffective. Supplementary potassium should be given to prevent potassium depletion. This report by Alexander and Gordon was published in *Arch. Internal Med. 108*:218 (Aug.) 1961.

WILLIAM E. JOHNSON

Iron Complex For Intramuscular Use

Intramuscular iron in the form of a sterile solution of an iron-sorbital—citric-acid complex with dextrose as a stabilizer was tested on 65 patients with stabilized iron deficiency. Clinical studies on the therapeutic effect and on the side effects and also a comparison with an iron-dextran complex (Imferon) are reported on this new iron preparation by Andersson in *Brit. Med. J.* (July 29) 1961, page 275. Tolerance of this drug (Jectofer) was good and only mild side effects were noted, the therapeutic effect was judged as satisfactory and a 60 percent utilization of the iron in the compound was stated by the author.

KENNETH W. HUCKENDUBLER

Intravenous Tolbutamide—Cerebral Hemodynamics And Oxygen Consumption

Previous reports have indicated that tolbutamide has a salutory effect upon the syndrome of Parkinsonism and multiple sclerosis. This study by Burns *et al.* was conducted to determine whether or not this salutory effect may have been brought about by altering cerebral hemodynamics or a change in cerebral oxygen consumption. The results of the study were reported in *Am. J. Med. Sci. 242*:189 (August) 1961. Six hospitalized patients were used in this study. One gram of tolbutamide dissolved in 10 ml. of water was given intravenously. Arterial and internal jugular venous blood samples were withdrawn simultaneously, 20 minutes after injection. No significant changes in cerebral hemodynamics or cerebral oxygen consumption could be demonstrated. The results indicated that any beneficial effect of the drug in the Parkinsonism syndrome or multiple sclerosis is not related to a change in cerebral hemodynamics or oxygen consumption nor a direct effect upon the carbohydrate metabolism of cerebral tissues.

RICHARD H. HARRISON

Timely Drugs

Alphadrol

GENERIC NAME: Fluprednisolone.

INDICATIONS: As an anti-inflammatory, antiallergic, antirheumatic, antileukemic, antihemolytic agent in acute rheumatic fever, rheumatoid arthritis, asthma, hay fever and allergic disorders, dermatoses, blood dyscrasias, and ocular inflammatory disease involving the posterior segment.

SIDE EFFECTS AND CONTRAINDICATIONS: Contraindicated in arrested tuberculosis, peptic ulcer, acute psychoses, Cushing's syndrome, herpes simplex keratitis, vaccinia, and varicella. Use with caution in active tuberculosis, diabetes mellitus, osteoporosis, chronic psychotic reactions, predisposition to thrombophlebitis, hypertension, congestive heart failure and renal insufficiency. Should intercurrent infection occur, it must be brought under control with appropriate antibacterial measures or administration of fluprednisolone should be discontinued. Fluprednisolone does not cause muscle wasting and muscle weakness that is associated with other corticosteroids. Fluprednisolone may suppress endogenous adrenocortical activity with long-term administration. Adrenocortical supportive therapy may be required if the patient is subjected to unusual stress either during or for several months after adrenocortical steroid therapy. Edema, hypertension and ecchymotic manifestations have rarely been observed.

DOSAGE: Four divided doses: after meals and with a snack at bedtime. For severe seasonal asthma, severe hay fever, and Rhus dermatitis: 6 to 15 mg. per day. For intractable allergic rhinitis: 4.5 to 15 mg. per day initially; 1.5 to 6 mg. daily for maintenance may be necessary in some patients when pollen counts are very high.

PREPARATIONS: Scored, elliptical tablets 0.75 mg. (light green) and 1.5 mg. (pink) fluprednisolone.

PACKAGED: Bottle of 20 and 100.

SUPPLIER: The Upjohn Company.

Getest

CHEMICAL COMPOSITION: Norethindrone acetate 2.5 mg. and ethinyl estradiol 0.05 mg.

INDICATIONS: Test for pregnancy. The rational is based on continuous production of progestogen and estrogen for maintenance of a decidual endometrium during pregnancy. In the continued presence of these hormones, the two day test is not followed by withdrawal bleeding. In short-term amenorrhea not due to pregnancy, the two day test is followed by desquamation of the endometrium with withdrawal bleeding. Thus failure to bleed within 15 days is a positive test for pregnancy and withdrawal bleeding within 15 days is a negative test. False-positive results (no bleeding) if suspension of the menstrual cycle is due to the onset of the menopause. For this reason, test is given to women of childbearing age with amenorrhea of short duration in whom there is reasonable prospect of pregnancy. Out of 210 cases, 95.7 percent were diagnosed correctly; the test proved accurate in 110 out of 120 pregnant patients (92.5%) and in all of 90 non-pregnant patients (100%).

SIDE EFFECTS: No adverse effects on the course of established pregnancy. Does not induce spontaneous or missed abortion. Nausea has been reported.

CONTRAINDICATIONS: Contraindicated in mammary or genital cancer.

DOSAGE: One tablet twice a day for 2 days.

PREPARATIONS: Tablets, white, uncoated, each containing 2.5 mg. norethindrone acetate and 0.05 mg. ethinyl estradiol.

PACKAGING: Bottles of 4 tablets for each single test.

SUPPLIER: E. R. Squibb and Sons.

Listica

GENERIC AND CHEMICAL NAMES: Hydroxyphenamate; 2-hydroxy-2-phenylbutyl carbamate.

INDICATIONS: Treatment of tension and anxiety associated with alcoholism, allergy, cardiovascular disease, dermatitis, peptic ulcers, premenstrual and menopausal tension, and pre- and post-operative anxiety and trauma. Not recommended for treatment of severe depressions.

SIDE EFFECTS: Mild drowsiness infrequently encountered.

CONTRAINDICATIONS AND PRECAUTIONS: No known contraindications. Habituation has not been noted, but the possibility should be considered in treating patients with a history of emotional dependence on drugs.

DOSAGE: One tablet (200 mg.) three or four times a day.

PREPARATION: Tablets, each containing 200 mg. of hydroxyphenamate.

PACKAGING: Bottles of 50 tablets.

SUPPLIER: Armour Laboratories.

Periactin Hydrochloride

GENERIC AND CHEMICAL NAMES: Cyproheptadine hydrochloride; 1-methyl-4-(5-dibenzo-(a,e)-cycloheptatrienylidene)-piperidine hydrochloride monohydrate.

INDICATIONS: A serotonin and histamine antagonist primarily recommended for the treatment of pruritic dermatoses such as urticaria, angioneurotic edema, dermatitis, eczema, eczematoid dermatitis, drug reactions, neurotic excoriations, poison ivy, sunburn, insect bites, pruritus ani and vulvae, and chicken pox.

SIDE EFFECTS: Drowsiness, dry mouth, dizziness, jitteriness, nausea, and skin rash have been reported. No evidence of agranulocytosis, jaundice, dystonia, or parkinsonism.

PRECAUTIONS: Patients who become drowsy should be cautioned against driving a car or operating machinery or appliances requiring alert attention.

DOSAGE: Adult dose is 4 mg. three or four times a day and adjusted to the size and response of the patient. Children's dose between ages of 2 and 14 years is 6 to 16 mg. a day in divided doses, depending upon the size and response of the patient. Single doses last 4 to 6 hours.

PREPARATION: Tablets, each containing 4 mg. cyproheptadine hydrochloride.

PACKAGING: Bottles of 100 tablets.

SUPPLIER: Merck Sharp and Dohme.

CONTROL OF POISONINGS

edited by ALBERT L. PICCHIONI, *Director, Arizona Poisoning Control Program*

Accidental Poisoning from Hypoglycemic Drugs

Before the introduction of oral drugs for the treatment of diabetes, hypoglycemia in nondiabetic persons was an uncommon cause of coma, since accidental parenteral administration of insulin was unlikely. At the present time, however, an increasing number of diabetic patients are using oral hypoglycemic drugs; hence these agents can now be found in many homes. Because of their widespread use, these drugs present another potential poisoning hazard for children who should find them readily available in the home.

Youberg[3] recently reported a case of accidental poisoning involving ingestion of chlorpropamide (Diabinese), an oral hypoglycemic drug. The victim was a 2-year-old boy who was thought to have ingested as many as 18 tablets (250 mg. each) of the drug. Apparently, the tablets belonged to the child's diabetic grandmother who was living in the same home as the child.

Upon admission to the hospital, the child was unconscious and was unresponsive to pin prick. The initial blood sugar level was found to be 25 mg./100 ml. The patient's initial response to intragastric administration of glucose was statisfactory. He regained consciousness and became increasingly alert. However, one and one-half hours after the last intragastric administration of glucose, he had a grand mal seizure and lost consciousness. He was then placed on intravenous glucose, whereupon he slowly regained consciousness. The most satisfactory therapy was found to be 10 percent glucose in water administered by intravenous drip supplemented by 50 percent glucose administered intravenously at intervals. The 10 percent glucose solution was continued until the second hospital day, after which time the patient was maintained on oral feedings. The blood sugar was 55 mg./100 ml. on the third day and 99 mg./100 ml. on the fourth hospital day. The patient continued to do well and was discharged on the eleventh hospital day. Despite the large dose of chlorpropamide, no toxic effects other than hypoglycemia with coma and convulsions were observed. This case history points out the long duration of action of this oral hypoglycemic drug and the need for vigorous and continual treatment with glucose in acute poisoning.

Youberg[3] stresses the importance of considering as a potential cause of coma the accidental ingestion of oral hypoglycemic drugs. In fact, it is his usual policy to administer glucose by intravenous infusion to all patients who upon initial examination are disoriented or comatose. His reason for doing this is to ensure a portal for medication in case of circulatory collapse or other emergency and to provide a rapid therapeutic test for unsuspected hypoglycemia.

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Juvenile "Glue Sniffers"

► The Arizona Poisoning Control Information Center at The University of Arizona, College of Pharmacy, continues to receive an alarming number of reports concerning intentional inhalation of vapors from plastic cement by juveniles. Since April, 1961, 54 instances of this practice, involving juveniles between the ages of 8 and 17 years, have been reported from the Phoenix and Tuscon areas. The plastic cement abused is one which contains the volatile solvent, toluene. Exposure to vapors of this solvent produces varying degrees of central nervous system manifestations such as transient euphoria, giddiness, vertigo, mental confusion, ataxia, and stupor. Although these effects are reversible, it should be emphasized that the youth intoxicated by toluene vapor would be no less a menace behind the wheel of an automobile than if he were driving under the influence of alcohol. In addition, repeated exposures to toluene vapors may produce anemia.

There are other plastic cements which contain harmful, volatile solvents such as ethylene dichloride and methyl cellosolve. These chemical agents are cap-

able of causing fatal liver and kidney damage following repeated and prolonged exposure to their vapors. Plastic cements containing these solvents are commercially available and may be purchased by juveniles.

In view of the potentially serious consequences of inhalation of the vapors of plastic cements, the Arizona Poisoning Control Information Center, once again, urges parents, educators, physicians, law enforcement officials, and merchants who sell these plastic cements to take steps that will discourage and prevent the abuse of these commercial products.

Treatment of Barbiturate Poisoning

► BARBITURATE DRUGS are frequently involved in accidental and intentional poisonings. During the 18-month period from January, 1960 to July, 1961, 134 cases of poisoning in Arizona from barbiturates were reported to the Arizona Poisoning Control Information Center at The University of Arizona, College of Pharmacy.

There continues to exist disagreement among investigators as to the most effective therapy for barbiturate poisoning. The differences in opinion mainly concern the advisability of the use of analeptic drugs as part of the treatment. A discussion of this subject was presented in a previous Arizona Poisoning Control Information Center's News Bulletin.[1]

A number of recent reports[2-4] from different groups of workers emphasize the excellent results which follow conservative management of barbiturate intoxication. The following are significant findings and conclusions reported by these investigators:

1. Mortality rate from barbiturate poisoning is significantly reduced by eliminating analeptic drugs from the treatment and by observing, rigidly, physiologic principles in therapy, especially with regard to the support of vital functions (respiratory, cardiovascular, and renal functions and electrolyte homeostasis).[2]

2. Cardiac arrhythmia, tachycardia, convulsion, nausea and vomiting, and postcoma psychosis (complications reported with analeptic drug therapy) are not seen in victims of barbiturate poisoning managed solely by supportive therapy, the so-called physiologic method of treatment.[3,4]

3. The use of analeptic drugs, such as amphetamine, caffeine, and picrotoxin, in deeply comatose patients (victims of barbiturate poisoning) *does not* shorten the duration of coma.[4] Intensive and meticulous supportive care is the therapy of choice in most cases of barbiturate poisoning. In cases of prolonged coma, especially those resulting from ingestion of long-acting barbiturates, hemodialysis may be a life-saving measure.[2,4]

4. Respiratory and circulatory functions are the most important considerations in supportive therapy for barbiturate poisoning. Primary focus of attention should be the maintenance of a patent airway. The airway should be cleared, and if the patient's reflexes permit, some form of pharyngeal airway or endotracheal tube should be passed. If apnea or respiratory insufficiency supervenes, artificial respiration should be instituted by means of a mechanical respirator, such as the Bennett or the Bird machine.[2-4] Almost as important as pulmonary ventilation in this supportive therapy is an adequate circulation. A shock syndrome characterized by low blood pressure, a rapid, feeble pulse and pale, cold sweating skin is exhibited by a majority of patients on admission to hospital.[2] Treatment for shock should include whole blood, dextran or plasma transfusion. Levarterenol should be administered by intravenous infusion to maintain blood pressure.[2-4] By continuing this active treatment until the patient is out of the shock phase, it has been found that the incidence of anuria and uremia due to kidney failure has declined.[2]

5. Good nursing care is another important aspect of the successful management of barbiturate poisoning. This phase of treatment consists of meticulous attention to vital signs, frequent changes of position of the patient, attention to pulmonary secretions, careful recording of fluid intake and output, and care of the eyes, skin, and mouth.[2-4] Since treatment of the comatose patient suffering from barbiturate poisoning demands an intensive, around-the-clock effort, this therapy is most effectively carried out in special observation wards such as the intensive therapy units which are now available in many hospitals.[2-4]

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edited by MILTON W. SKOLOUT, *Chief, Pharmacy Department, Clinical Center, Bethesda, Maryland*

Ethylene Oxide Gas In Sterilization

by ERNEST S. LENTINI

► STEAM IS AN ACCEPTED METHOD FOR STERILIZATION of hospital items. In recent years, heat labile items (such as plastics) have been introduced into hospital usage. These items require sterilization at a lower temperature, which is often called "Cold Sterilization."[1]

At the present time, the most effective agent for cold sterilization is ethylene oxide gas. It is effective against all organisms, damages few materials, has the ability to penetrate fabrics, paper, and plastics, and is effective at 120° F. to 140° F.

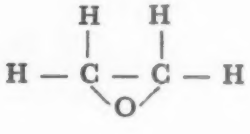
Historical Background

The bactericidal activity of ethylene oxide was first noted by Schrader and Bossert (recorded by the Patent Office in 1936),[2] who experimented with it as a fumigant. Its first commercial use was in the food industry to "sterilize" spices, freeing them of all live insects.

The use of ethylene oxide gas as an agent for cold sterilization has been reported frequently in the literature over the past ten to fifteen years. In this presentation, the more important points concerning toxicology, action on bacteria, and humidity requirements will be covered.

Properties

Ethylene oxide, or 1, 2 epoxyethane, boils at 10.8° C. and freezes at 113.3° C., making it a gas at room temperature and atmospheric pressure. It has an ethereal-like odor, is soluble in alcohol, ether and water, and is classified as a cyclic ether or an epoxy compound with the following structure:



Toxicity

Toxicity to humans is a consideration in the use of the gas, and its flammability is a hazard when its vapors are combined with air. A concentration of 3% ethylene oxide gas mixed with air can cause a violent explosion. However, this objectionable hazard may be overcome by combining or diluting this gas with carbon dioxide or halogenated hydrocarbons, such as Freons. The two halogenated hydrocarbons used are trichlorofluoromethane (Freon 11) and dichlorodifluormethane (Freon 12). Freon 11 liquifies below 23.7° C., while Freon 12 is a gas at ordinary room temperature. Usually the two Freons are equally mixed with ethylene oxide gas to provide a practical working pressure in the tank or disposable container for use in a sterilizer. These combinations increase the cost of ethylene oxide sterilization but are necessary for safety.

Commercial Products

Among the mixtures commercially available are:

Steroxide-10 — 90% Carbon Dioxide and 10% Ethylene Oxide[a]

Carboxide — 90% Carbon Dioxide and 10% Ethylene Oxide[b]

Cryoxide — 89% Halogenated Hydrocarbons (Freons) and 11% Ethylene Oxide[c]

Steroxcide-12 — 88% Halogenated Hydrocarbons (Freons) and 12% Ethylene Oxide[a]

Oxyfume-20 — 80% Carbon Dioxide and 20% Ethylene Oxide[a]

Although the ethylene oxide gas mixtures are toxic, no gas mask is required when using them for sterilization in properly designed equipment and where ventilation is adequate. However, ethylene oxide should be used by trained technicians. Ethylene oxide gas does not have a distinctive odor in low concentrations,[3] but irritation to the eyes and nasal mucosa warns a trained

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a. Wilmot Castle Company, Rochester, N. Y.

b. Union Carbide and Chemicals Corp., Possiac, N. J.

c. American Sterilizer Company, Erie, Pa.

operator when relatively low concentrations are present in the air. Human exposure in an atmosphere containing 50 PPM for an eight hour working day is considered safe.[12]

Burns on the skin could result from wearing apparel which has not been properly aired. Phillips and Kay have reported cases of accidental blistering of the skin due to exposure to ethylene oxide vapors.[4] This occurred when rubbed shoes were donned by laboratory workers immediately after they had been sterilized with ethylene oxide. Vapors impregnated in the rubber seeped onto the skin. Sterilized items should be aired prior to use. Usually twenty-four hours is sufficient time in which to clear the residual gas.

Effectiveness

The effectiveness of ethylene oxide as a sterilizing agent is contingent on four variables. The are: humidity, temperature, gas concentration, and time.

The necessity of moisture within the sterilizing chamber was investigated in detail by Kaye and Phillips.[5,6] They found that the bactericidal action of ethylene oxide is increased as the items to be sterilized within the chamber become drier. However, when a relative humidity of 20% is reached, the sterilizing action ceases. Effective sterilization in relatively dry systems is an advantage when sterilizing items affected by high moisture. In general practice, a relative humidity of approximately 30 to 50 percent is desirable in the sterilizing chamber. The equipment must be designed to add additional moisture automatically when it is deficient. The proper moisture content must be present in the items to be sterilized prior to exposure to the gas. Otherwise, sterilization will be ineffective.

When sterilization is carried on, ethylene oxide gas dissolves in the moisture surrounding the individual bacteria. Any change in moisture content also alters the concentration of the gas available to perform the biocidal action. Dehydrated organisms cannot be destroyed, and overly hydrated organisms become more difficult to sterilize. For instance, Kaye reports that the sterilizing action of ethylene oxide on test spores was four times more rapid at 28% than at 65% relative humidity, and ten times as rapid at 28% than at 97% relative humidity.

Ethylene oxide destroys bacteria by an alkylation reaction. This ionic reaction proceeds with difficulty under very dry conditions, and if the object becomes devoid of moisture, sterilization will be extremely difficult or incomplete.

The alkylation reaction proceeds as follows: Ethylene oxide replaces readily available hydrogen atoms with a hydroxyethyl group, thereby blocking reactive groups needed for the normal metabolism of the organism. One group of investigators from the University of Tokyo[7] have referred to Ethylene oxide as a mutagenic agent.

Frankel and Connat reported that ethylene oxide reacts upon the bacterial protein by direct alkylation.[8]

Figure 1 shows the alkylation reaction upon protein

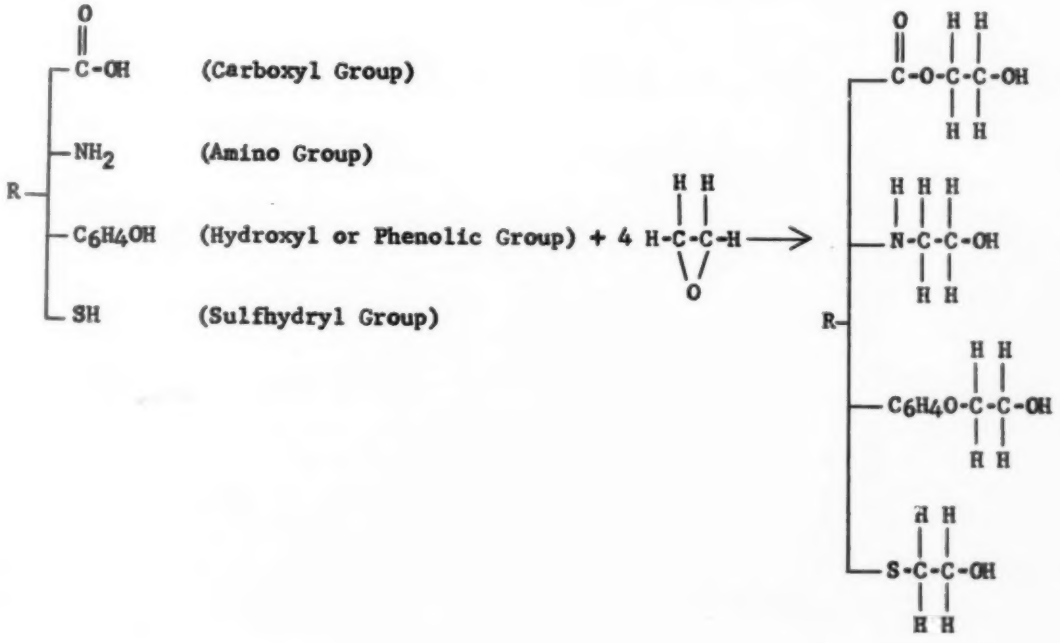
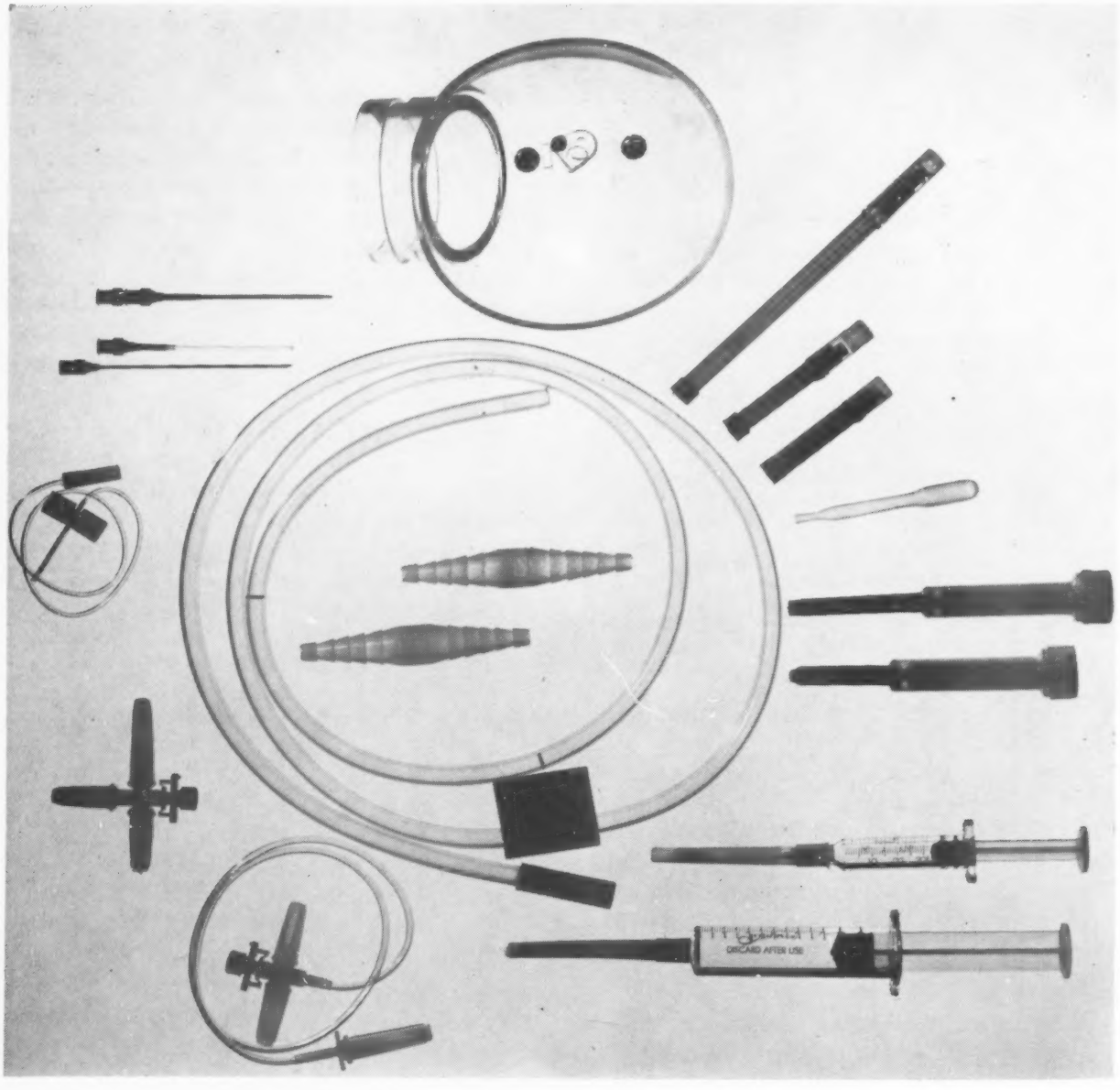


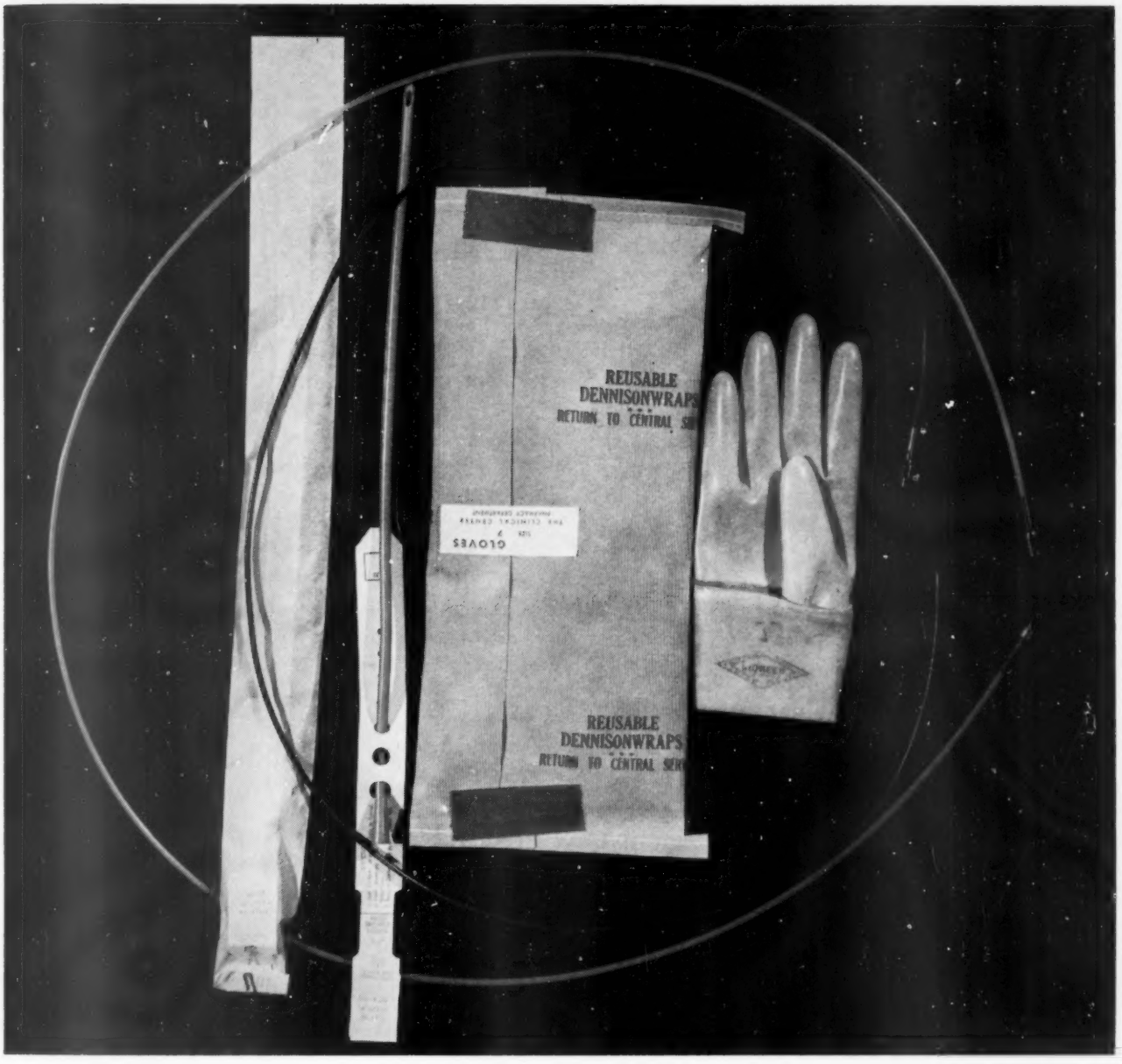
Figure 1 shows the reaction of ethylene oxide with the keratin protein molecule. Phillips reports that ethylene oxide reacts in the identical manner upon the bacterial protein.[9,10]

The alkylation reaction upon protein is unusual because ethylene oxide has more than one choice of action as shown in Figure 1. If one site is blocked, it attacks another site which has an available hydrogen atom. All investigators believe that only the sulfhydryl groups react with the ethylene oxide. It appears that the sulfhydryl group is the most susceptible.

During the formation of a spore,[11] these vulnerable sulfhydryl groups may be protected by a shifting or reformation of the protein molecule. This could account for the difference in resistance to sterilization which spores usually exhibit over the vegetative organisms. However, if the sulfhydryl groupings are not readily available for the chemical attack, the ethylene oxide can attack the other reactive groups. Blockage of the carboxyl, amino, or hydroxyl groups can cause as great an interference of the normal metabolic processes within the cell as can the blockage of the sulfhydryl groups, which are essential to the survival of the organism. Once the ethylene oxide has alkylated a portion of the protein molecule, it is not reversible and is, therefore, bactericidal.

The two photographs illustrate typical items which may be sterilized by the ethylene oxide method. Except for the needles and rubber gloves, the other items are of various plastic compositions. Some of the items are usually presterilized when purchased by the hospital; however, these are examples of items sterilized by the ethylene oxide method. Many additional hospital and patient items may also be successfully sterilized by this method





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W.H.O. OFFICIAL SPEAKS at Pharmacy Assembly of NEW YORK STATE COUNCIL OF HOSPITAL PHARMACISTS

► IN SOME AREAS OF THE GLOBE more progress is being made by medicine than by diplomacy. While there may be political disagreement in these areas, there is medical cooperation. This was a central point pursued by Dr. Michael R. Sacks, medical liaison officer of the World Health Organization at the United Nations, when he addressed some 300 persons at the first annual Pharmacy Assembly of the New York State Council of Hospital Pharmacists in New York City on October 14. The Assembly at the Statler-Hilton Hotel was presented jointly by the Council and Pfizer Laboratories, division of Chas. Pfizer & Co., Inc.

Leading physicians, pharmacy educators and officials, along with hospital pharmacists and other health specialists, participated in the one-day seminar. Morning and afternoon sessions were held, covering such topics as hospital pharmacy service, procedures and responsibilities, the hospital formulary, and concluding with a dinner featuring Dr. Sacks.

Dr. Sacks, who was introduced by Dr. John Connorton, executive director of the Greater New York Hospital Association, spoke of the efforts of the International Red Cross and WHO to save the Congo from medical chaos after Belgian physicians were forced to leave the country when Congolese independence was granted.

"The right drug in the right place at the right time" was the subject of the panel shown below. From left to right at the table are: Joseph Vevoda, hospital marketing manager, Pfizer Laboratories; Dr. Charles A. R. Connor, associate professor of clinical medicine, N.Y.U. College of Medicine; Joseph A. Oddis, secretary, American Society of Hospital Pharmacists (moderator); Dr. August H. Groeschel, associate director for professional service, N.Y. Hospital; Mrs. Marion Woods, assistant chief, Nursing Education, Veterans Administration Hospital, East Orange, N.J.; and Robert Bogash, director, Pharmacy Department, Mt. Sinai Hospital

He said that although the political problems were well publicized and thus overshadowed the medical situation, more Congo lives were jeopardized by threat of epidemic than by gunfire. He said the International Red Cross provided interim medical relief and that WHO was attempting to correct the long-run situation. The health body is putting the Congolese who had assisted Belgian doctors through a three year accelerated medical course in France and is supporting a drive to establish a medical school in the Congo.

Dr. Sacks, a member of WHO since 1949 with assignments in Europe and Southeast Asia, also noted that WHO was encouraged in its drive to totally eradicate malaria as a world health problem.

Dr. Sacks was the principal and last speaker on the program which had opened with Grover C. Bowles, Jr. speaking on "Hospital Pharmacy in Depth." Mr. Bowles, chairman, House of Delegates, American Pharmaceutical Association, called for more participation by hospital pharmacists in such activities as teaching and developmental research.

Dr. John N. McDonnell, president of the Columbia University College of Pharmacy, enumerated responsibilities of hospital pharmacy. He predicted that changes were coming in hospital pharmacy and said pharmacy schools will have to alter their curriculums to meet new educational challenges.

Concluding the morning session, Herbert L. Flack, assistant director of the Jefferson Medical College Hospital, spoke on "The Formulary System's Added Responsibility: Quality Control," and Dr. George F. Archambault, president-elect of the American Pharmaceutical Association, spoke on "Professional Prerogatives Challenged."

In the afternoon, Mrs. Gertrude M. Lorber, medical librarian of Pfizer, and Harold Neham, director of Pharmacy Service of University Hospital, New York University (NYU) Medical Center, suggested methods for pharmacists to use in coordinating and retaining drug information. They also discussed formats drug manufacturers might use in supplying information to pharmacists.

Kenneth S. Griswold, secretary of the New York State Board of Pharmacy, commented on the regulatory trends in the practice of pharmacy in institutions.

He was followed by a panel on: "The Right Drug in the Right Place at the Right Time." Panel members were: Dr. Charles A. R. Connor, associate professor of clinical medicine, NYU College of Medicine; Dr. August H. Groeschel, assistant director, New York Hospital; Robert Bogash, director, Pharmacy Department, Mt. Sinai Hospital; Mrs. Marion Woods, assistant chief, Nursing Education, Veterans Administration Hospital, East Orange, N.J., and Joseph Vevoda, hospital marketing manager, Pfizer Laboratories. The moderator was Joseph A. Oddis, director, Division of

Dr. John Connorton, executive director, Greater New York Hospital Association, introduces Dr. Michael R. Sacks (seated) of World Health Organization

Louis P. Jeffrey, president of the New York State Council of Hospital Pharmacy and president elect of the American Society of Hospital Pharmacy, discusses the day's program with ASHP Secretary, Joseph A. Oddis

Hospital Pharmacy, American Pharmaceutical Association, and executive secretary, AMERICAN SOCIETY OF HOSPITAL PHARMACISTS.

Louis P. Jeffrey, president of the New York State Council of Hospital Pharmacists, and president-elect of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS; Joseph Oddis and Don Pendas, professional programs' manager of Pfizer Laboratories, made welcoming remarks.

Dr. Groeschel served as honorary chairman of the morning and afternoon sessions and Dr. Connorton was honorary chairman of the dinner.

Presiding at the morning, afternoon and evening sessions, respectively, were: Dr. Daniel H. Murray, dean, School of Pharmacy, University of Buffalo; Dr. Andrew J. Bartilucci, dean, St. Johns' University College of Pharmacy; and Louis Jeffrey. Norman Baker, Council vice president, presided at the luncheon.

Sister Mary Vera, R.S.M., director of Pharmacy Service, Mercy Hospital, Buffalo, served as chairman of the Assembly Program Committee and Joel Yellin, chief of the Department of Pharmacy, Hebrew Home for the Aged, Riverdale, N.Y., was vice chairman.

AAAS 1961 Annual Meeting—Denver

► HOSPITAL PHARMACISTS from all parts of the United States will again join with the Pharmacy Section (NP) of the American Association for the Advancement of Science for its Annual Convention in Denver, Colorado, December 26-31. Meetings of the eighteen AAAS sections with seventy-six participating organizations will be held throughout the week.

The AMERICAN SOCIETY OF HOSPITAL PHARMACISTS joins with the Pharmacy Section in co-sponsoring the three-day program devoted to various areas of pharmaceutical practice and research. Other organizations participating in the Pharmacy Section include the American Association of Colleges of Pharmacy, the American College of Apothecaries, the American Pharmaceutical Association, Scientific Section, and the National Association of Boards of Pharmacy.

The program for the total meeting is coordinated by Dr. John E. Christian of Purdue University, who serves as Secretary of the Pharmacy Section. Included on the program this year are two sessions for contributed papers in hospital pharmacy (December 27); the interesting disciplinary symposium on existing levels of radioactivity in man and his environment (December 28); and two sessions for contributed papers (December 29). The Section's luncheon with the address of Vice-President Joseph A. Oddis and also a sectional dinner will be held on December 27.

The detailed program for the day devoted to contributed papers in the area of hospital pharmacy is printed below. Hospital pharmacists from throughout the nation are urged to attend. This will be a special opportunity for members of the Colorado Society of Hospital Pharmacists and other groups in the West to participate in a national meeting in which pharmacy plays an important role.

Wednesday Morning, December 27
Century Room, Cosmopolitan Hotel

Contributed Papers on Hospital Pharmacy. Arranged by George F. Archambault, Don E. Francke and Joseph A. Oddis.

9:00 a.m. OPENING REMARKS AND ANNOUNCEMENTS. John E. Christian, Secretary, Section Np.

PRESIDING: George F. Archambault, chief, Pharmacy Branch, Division of Hospitals, Bureau of Medical Services, U. S. Public Health Service, Washington, D. C.

1. GREETINGS—AMERICAN SOCIETY OF HOSPITAL PHARMACISTS (3 minutes)
   American Pharmaceutical Association (3 minutes)
   Colorado Society of Hospital Pharmacists (3 minutes)

2. A COMPREHENSIVE EVALUATION OF HOSPITAL PHARMACY GRADUATE PROGRAMS. John L. Lach, and William W. Tester, director of hospital pharmacy services, State University of Iowa, College of Pharmacy, Iowa City, Iowa. (20 min.)

3. POSSIBLE CONTAMINATION OF MULTIPLE DOSE VIALS. Samuel Kohan, assistant chief, Pharmacy Service, Fitzsimons General Hospital, Denver, Colorado. (10 min.)

4. INTERESTING ASPECTS OF NARCOTIC CONTROL. Winston J. Durant, director, Pharmacy Services, University Hospitals, Madison, Wisconsin. (Lantern, 20 min.)

5. TOXICITY, UNTOWARD REACTIONS AND OTHER PROBLEMS ENCOUNTERED IN THE USE OF PLASTICS IN MEDICINE. John Autian, Ph.D., Drug-Plastic Research Laboratory, University of Texas, Austin, Texas and Harold H. Bryant, Ph.D., Pharmacology Research Section, Hynson, Westcott & Dunning Laboratory, Baltimore, Maryland. (20 min.)

6. PROVIDING AN EMERGENCY ROOM DISPENSING SERVICE. Theodore Taniguchi, director, Hospital Pharmacy Service, University Hospital, Seattle, Washington. (20 min.)

Wednesday Noon, December 27
Century Room, Cosmopolitan Hotel

12:00 Noon Luncheon. Arranged by E. R. Squibb & Sons, New York. Coordinated by P. A. Freeman, manager, Professional Relations.

PHARMACY AND HOSPITAL PHARMACY—Address of the Vice President and Chairman, Section Np, Joseph A. Oddis, executive secretary, AMERICAN SOCIETY OF HOSPITAL PHARMACISTS, and director, Division of Hospital Pharmacy, American Pharmaceutical Association, Washington, D. C.

Wednesday Afternoon, December 27
Century Room, Cosmopolitan Hotel

1:30 p.m. Contributed Papers on Hospital Pharmacy. Arranged by George F. Archambault, Don E. Francke and Joseph A. Oddis.

PRESIDING: Don E. Francke, chief pharmacist, University of Michigan, University Hospital, Ann Arbor, Michigan.

1. PROFESSIONAL PHARMACY STAFF NEEDS, A STUDY BASED ON TOTAL DEPARTMENT MEASURABLE AND NON-MEASURABLE WORKLOADS. George F. Archambault, chief, Pharmacy Branch, Division of Hospitals, Bureau of Medical Services, and Ervin F. Rothenbuhler, management analysis officer, Bureau of Medical Services, U. S. Public Health Service, Washington, D. C. (20 min.)

2. THE ENHANCING EFFECT OF ULTRASONIC VIBRATIONS ON THE EFFECTIVENESS OF SOME GERMICIDAL AGENTS USED FOR COLD STERILIZATION. David D. Almquist and William W. Tester, director of hospital pharmacy services, State University of Iowa, College of Pharmacy, Iowa City, Iowa. (20 min.)

3. THE MANUFACTURER'S INCREASED RESPONSIBILITIES FOR SELLING UNDER THE HOSPITAL FORMULARY SYSTEM, PART II. TABLETS. Herbert S. Carlin, head, Pharmacy Department, University of Colorado Medical Center, Denver, Colorado, and Herbert L. Flack, assistant director, Jefferson Medical College Hospital, Philadelphia, Pennsylvania. (20 min.)

4. IMPORTANT ELEMENTS OF QUALITY CONTROL UNDER THE FORMULARY SYSTEM. John M. Gooch, assistant director, Pharmacy Service, Veterans Administration, Washington, D. C. (20 min.)

5. GOALS FOR HOSPITAL PHARMACY. *Panel Discussion.* Don E. Francke, chief pharmacist, University of Michigan, University Hospital, Ann Arbor, Michigan, *Presiding.*

Wednesday Evening, December 27
Century Room, Cosmopolitan Hotel

6:00 p.m. Program arranged by Wyeth Laboratories, Philadelphia, Pennsylvania. Coordinated by H. L. Ferrier, manager, Hospital Promotion.

7:00 p.m. Program arranged by McKesson and Robbins, Inc., New York. Coordinated by Donald R. Pfarr, manager, Hospital Department.

as the president sees it—

JACK S. HEARD, *St. Francis Memorial Hospital, San Francisco, California*

►As the Society year is passing its mid-point at the writing of this page, it would be well to take a brief look at some of our committees and see how they are doing. Reference to my Inaugural Address in the green pages of the Journal for August, 1961, will serve as a review of the status and mission of each committee at the beginning of the year. While most of the chairmen have initiated some correspondence in respect to the work of their committees, I would like to discuss the work of some that are particularly interesting at this time.

The work of the Program Committee is mainly thought of in terms of the program of the Annual Meeting. However, a large share of the work is devoted to Institute planning. I have already seen some excellent results of the work of Mr. Parker and his Committee in the General Institute conducted in San Francisco in August. (The same Institute was conducted in Albany in June.) Mr. Parker, in conjunction with Mr. Joseph Oddis and Mr. Clifton Latiolais, has planned the Specialized Institute to be held in November in Chicago. In respect to our Annual Meeting in Las Vegas next March, Mr. Parker conducted a planning session at the time of the San Francisco Institute. At this time, we developed a general concept for the Annual Meeting program and a number of proposed highlights for the various sessions. Mr. Parker was so enthused over the ideas which were developed that I believe he and his Committee will surpass the fine job they did for the 1961 Annual Meeting.

The Resolutions Committee, now in its second year as a Standing Committee, is developing a policy for the submission, consideration, and general handling of resolutions. President-Elect Jeffrey, the Chairman of the Committee, is recommending that a policy be adopted which prescribes the time limit before the Annual Meeting in which resolutions must be submitted. I urge all chapters and individual members to prepare resolutions they have developed and submit them promptly to the Chairman of the Resolutions Committee.

The Committee on Laws, Legislation, and Regulations has a big job cut out for it by its Chairman, Vice President-Elect John Webb. Mr. Webb, after careful study of the problems facing the Committee has divided these problems into several areas. These areas include licensure (credit for experience in hospital pharmacies), revision of state pharmacy acts, liaison, and education. Particular attention is being paid to the states which do not give full credit for licensure to experience gained in hospital pharmacies. It is our hope to make further gains in this area this year.

The Committee on Safety Practices and Procedures, under the chairmanship of Mr. R. David Anderson, is continuing its work with the National League of Nursing to develop a set of standards for the safe handling of medications in hospitals. Further meetings and correspondence have been necessary and still more work will have to be done before the standards will be ready for approval by the two organizations involved. We are gratified that the members of the ASHP and NLN involved in this work have been willing to continue to devote time and effort to this project.

Mr. Charles King and his Committee on Classification and Filing Systems are still working on their pet project—the critical study and improvement of the proposed system of filing hospital pharmacy records and information. The Committee hopes to perfect the system and to recommend its adoption as the official system of the ASHP.

The above is representative of the current work of our committees. In one of the future president's pages, I plan to mention current activities of some of the other committees which carry on the work of the Society.

Early in October, I had the opportunity to attend some of the sessions of the meeting of the American College of Apothecaries in San Francisco. President Henry Gregg of the ACA sent me an official invitation to represent the ASHP; it was a pleasure to do so. The program, lasting for three days, was broad in scope and covered important professional and economic subjects. A very interesting, although provocative and controversial talk, was "Consumer Critique" by Mrs. Helen Nelson, of the California Consumer Counsel. Mrs. Nelson, a critic of Pharmacy pricing policies, attempted to paint the picture of the pharmacy profession as seen through the eyes of the average "consumer." She suggested that if pharmacists wish to be considered as professionals, they should give professional service (which she says they are deficient in now) and charge for their service on a professional fee basis rather than a cost plus system. Many pharmacists disagree with her evaluation of the profession but her conclusions actually were in line with some of the best thinking in pharmacy today. See you next month!

Jack S. Heard

News

Major Hibberd Receives Andrew Craigie Award

Major Paul E. Hibberd, USAF, MSC, received the Andrew Craigie Award for meritorious contributions to pharmacy of the Federal medical services at the pharmacy luncheon at the Association of Military Surgeons meeting in Washington, D. C., on November 6, 1961.

The award was established by the Lederle Laboratories Division, American Cyanamid Company, in honor of Andrew Craigie, the first Apothecary General of the U. S. Armed Services. The award, consisting of a plaque, is presented annually for outstanding accomplishment in the advancement of professional pharmacy within the Federal Government.

In his position as Chief of Pharmacy Service, USAF Hospital Lackland, Lackland Air Force Base, San Antonio, Texas, Major Hibberd has accomplished a series of management studies of the pharmacy operation which resulted in the saving of man-hours and money, reduced the patient's waiting time, and increased the professional efficiency of his personnel toward the patient and the health team. His article, "No Line at the Pharmacy," which was published in the February (1961) *USAF Medical Service Digest,* has proved to be a valuable tool to many Air Force pharmacies and pharmacists as a management guide to increase efficiency and professionalism of the pharmacy in relation to the patient, the health team, and the hospital. He developed the Lackland Hospital Formulary and the Pharmacy Tablet and Capsule Identification Board, both of which have facilitated better patient care.

Born in Kearney, Nebraska, Major Hibberd received his B.S. in Education from Nebraska Teachers College in 1940 and his B.S. in Pharmacy from the University of Houston in 1950. He is a registered pharmacist in Texas.

During World War II, Major Hibberd served with the Army Air Corps. In February 1951, he was recalled to active duty and in September of that year he transferred to the USAF Medical Service Corps.

Major Hibberd is a member of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS, the American Pharmaceutical Association, and the Texas Pharmaceutical Association.

Nominations Invited for 1962 Urdang Medal

Nominations for the next George Urdang Medal for distinguished historical writing will be accepted until *31 December1961* according to the American Institute of the History of Pharmacy. Established by the Institute in 1952, on the occasion of the seventieth birthday of the noted historian of pharmacy and first Director of the Institute, George Urdang, the medal has been awarded seven times since then.

The selection of an Urdang medalist is carried on through the world-wide organization of the International Academy for the History of Pharmacy, with its headquarters in Rotterdam, followed by ratification by the Committee on Awards of the Institute.

A postal card request addressed to the Institute office, 356 Pharmacy Building, Madison 6, Wisconsin, will bring a nomination form that should be returned to Dr. P. H. Brans, Secretary-General, Académie Internationale d'Histoire de la Pharmacie, Nieuwe Binnenweg 420, Rotterdam-W. 2, The Netherlands.

Paul R. Hoff Named to AHA-ASHP Joint Committee

Mr. Paul R. Hoff of Bannock Memorial Hospital, Pocatello, Idaho, has been named one of the American Hospital Association's representatives to the Joint Committee of the A.H.A. and the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS. Other A.H.A. representatives include W. Kevin Hegarty, Greater Bakersfield Memorial Hospital, Bakersfield, California, who serves as Chairman of the A.H.A group; H. Robert Cathcart, Pennsylvania Hospital, Philadelphia, and Joseph E. Snyder, Presbyterian Hospital in the City of New York, New York.

Representatives of the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS currently serving on the Joint Committee are George F. Archambault, U. S. Public Health Service, Washington, D. C.; Grover C. Bowles, Baptist Memorial Hospital, Memphis, Tennessee; Paul F. Parker, University of Kentucky Medical Center, Lexington, Kentucky; and Vernon O. Trygstad, Veterans Administration, Washington, D. C.

► THE FOURTEENTH ANNUAL TEXAS Hospital Pharmacy Seminar will be held at the Unievrsity of Texas in Austin February 23-25, 1962. The tentative program will appear in a forthcoming issue of this JOURNAL.

► ASHP SECRETARY JOSEPH A. ODDIS represented the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS at the National Congress of Medical Quackery held in Washington, D.C. October 6-7. Sponsored jointly by the American Medical Association and the Food and Drug Administration, the program included discussions of the problems in the field of medical quackery with particular reference to the legal and medical problems in the distribution of such preparations.

► DRUG NEWS WEEKLY is a business newspaper recently issued weekly by Fairchild Publications, Inc. Designed particularly for industry, the newspaper is

available on subscription at a special charter subscription rate of $1.00 per year or $2.00 for three years. Subscriptions may be directed to Drug News Weekly, 7 East 12th Street, New York 3, New York.

► John W. Dargavel, executive secretary of the National Association of Retail Druggists for 29 terms, died of a heart attack on October 9 at his home in Chicago. Dr. Dargavel, known for his efforts in passing fair trade legislation, was recognized as a leader in retail pharmacy.

► Hospital Accreditation References, 1961 Revision, has recently been made available through the American Hospital Association. Copies can be ordered at a cost of $3.25 each from the American Hospital Association, 840 North Lake Shore Drive, Chicago 11, Illinois.

► Maxwell Pike, chief pharmacist at the Long Island Jewish Hospital, New Hyde Park, Long Island, New York, has been appointed a lecturer in Hospital Pharmacy Management at the Brooklyn College of Pharmacy, Long Island University. The course is part of the Master of Science program with specialization in hospital pharmacy administration.

► Drug Topics Red Book, 1962 Edition, has recently been distributed to all retail drug stores throughout the country. Designed to meet the needs of practicing pharmacists, the book is divided into three principal parts—Product Information Section, Pharmacists Reference Section, and a listing of manufacturers of drug store type products.

In the Product Information Section, some 165,000 drug store type products are listed by brand name in alphabetical order. 13,104 listings of new items have been added to this new edition. Products that are dispensed only on prescription are identified by the symbol (Rx). Identification of Narcotic Drug Products is by the use of the letter (N). In some instances, detailed product descriptions are given.

In the Pharmacists Reference Section, information includes lists of secretaries of pharmaceutical organizations, national and state, along with references utilized by practicing pharmacists.

The 1962 edition of *Drug Topics Red Book* is available currently at $9.00 per copy, from Drug Topics Red Book, 10 East 15th Street, New York 3, New York.

► Charles William Hartman has been appointed Dean of the School of Pharmacy at the University of Mississippi, University, Mississippi.

► Donald Pfarr has been appointed manager of the Hospital Department for McKesson & Robbins, New York City. Mr. Pfarr is a graduate of Johns Hopkins University in Baltimore, with a B.S. degree in business. He also holds an M.B.A. degree in marketing from the Wharton Graduate School of Business at the University of Pennsylvania. Prior to accepting his present position, Mr. Pfarr has had experience as a sales trainee at the Oklahoma City Division of McKesson & Robbins and later as sales manager for the McKesson Division in Mobile, Alabama.

► Project Hope will be the subject of an hour long NBC-TV report to be shown on the network on Tuesday, November 28 at 8:30 P.M., E S.T. (Check local listings for the exact times in other sections of the country.) This hour long show is the result of an attempt by NBC to bring the American people up-to-date on the efforts of the members of the health team aboard the S.S. HOPE I.

► Donald E. Prescott has been named assistant to the secretary of the American Pharmaceutical Association and editor of a new bi-weekly publication to be issued from the Association. The new publication, to be launched in January, will be issued every other week by the office of the secretary to report Association activities and views and to interpret events and developments affecting the profession of pharmacy for A.Ph.A. members. According to Dr. William S. Apple, secretary of the A.Ph.A., the publication will increase and hasten communications between members and the Washington headquarters and supplement the information disseminated by the *Journal of the American Pharmaceutical Association* and the *Journal of the Pharmaceutical Sciences.*

Competition For Historical Writing Announced

► The Committee on Historical Records of the American Society of Hospital Pharmacists is again soliciting papers for the annual competition on historical writing which is sponsored jointly by The Committee and the American Institute of the History of Pharmacy.

The closing date for this year's competition is *February 1, 1962,* and awards will be made at the Annual Meeting of the Society in Las Vegas during the week of March 25, 1962, to the two persons submitting the most noteworthy papers.

Any historical aspect of hospital pharmacy will be acceptable as a subject for a paper. For example, histories of individual affiliated chapters, biographical studies of deceased hospital pharmacists, military pharmacy, discussion of old hospital formularies or the history of specific hospital pharmacies, are some of the topics that can be explored.

Entries in this year's competition are to be sent by February 1, 1962, to:

Dr. Alex Berman
Chairman, ASHP Committee
on Historical Records
College of Pharmacy
The University of Texas
Austin 12, Texas

SELECTED PHARMACEUTICAL ABSTRACTS

and summaries of other articles interesting to hospital pharmacists

edited by NORMAN HO

STERILIZATION CONTROLS

Dehydrated Sterilizer Controls Containing Bacterial Spores and Culture Media, Brewer, J. H. and McLaughlin, C. B., J. Pharm. Sci. 50:171 (Feb.) 1961. (Biological Research Laboratories, Hynson, Westcott and Dunning, Inc., Baltimore, Md.)

A sterilization control of paper impregnated with spores of the heat-resistant organism, *Bacillus stearothermophilus*, and specific culture media in a dehydrated state is described. When suspended in distilled water, the media will elute from the test strip and support the growth of surviving bacteria. The necessity of preparing media for culturing the controls is eliminated.

AUTHOR'S SUMMARY

ANTIBACTERIAL ACTIVITY OF 5-NITROFURFURAL HYDRAZONES

Antibacterial Activity of 5-Nitrofurfural Hydrazones, Golonka, J., Kotula, W., Acta. Pol. Pharm. 18:243-7 (Mar.) 1961.

The authors have examined 7 derivatives of 5-nitrofurfural (hydrazon with rhodanoacetic acid hydrozide, dihydrazones with dihydrazides of dicarboxylic acids, namely: maleic, succinic, glutaric, adipic, pimelic and sebacinic acid in five gram-positive and nine gram-negative bacterial strains.

All examined compounds proved to be antibacterially active. The dihydrazons of 5-nitrofurfural with dihydrazides of adipic and glutaric acid were the most active substances. The strain *Pseudomonas aeruginosa* was resistant to all tested substances. Enterococcus 509 was resistant to dihydrazon of 5-nitrofurfural with dihydrazide of maleic acid.

AUTHOR'S SUMMARY

INVESTIGATIONS OF DYES USED FOR DRUGS

Investigation of Dyes used for Drugs, Piekarski, L., Krauze, S., Acta Pol. Pharm. 18:103-9 (Feb.) 1961.

Control of dyed drugs is necessary due to the necessity of ascertaining whether only dyes harmless to human health have been used, and whether the dyes are free from harmful contaminations.

This qualitative control comprises isolation, separation and identification of the dyes added to the drugs.

The authors effected isolation of the dyes from the dragees by the use of chinoline or of defatted wool. The isolated dyes were then separated by the method of ascending paper chromatography and identified with the Rf values of known dyes separated simultaneously. Furthermore, the authors applied Green's method too.

For dying drugs, the authors suggest 9 synthetic dyes, soluble in water and admitted for dying food articles; they also indicate reactions characteristic for these dyes.

AUTHOR'S SUMMARY

PRACTICAL ASPECTS OF ETHYLENE OXIDE STERILIZATION

Practical Aspects of Ethylene Oxide Sterilization, Evans, R. T., Bull. Parent. Drug Assoc. 15:9 (July-Aug.) 1961. (Sterilon Corporation, Buffalo, New York).

Ethylene oxide is an excellent sterilizing agent for plastic parts, glass, metal, rubber, cotton, and similar synthetic fabrics. It will satisfactorily sterilize non-heat resistive items which will not withstand autoclaving methods. Factors in ethylene oxide sterilization are the length of the cycle, the amount of vacuum and pressure, the temperature, and the relative humidity in accordance with the individual product. Products to be sterilized should be clinically clean prior to sterilization. The most widely used concentration of ethylene oxide is a 10 percent ethylene oxide and 90 percent carbon dioxide mixture which is non-explosive and relatively easy to handle. The optimum relative humidity for sterilization is 30 to 40 percent. An ambient temperature of about 140°C. and a 29 inch vacuum pulled in the chamber will aid in completing the sterilizing cycle in four hours. It is recommended that precontaminated samples containing a suspension of *Bacillus subtilis* be used for sterility test purposes in addition to the recommended *U.S.P.* procedures.

The gas is extremely helpful in the sterilization of packaged items due to its ability to penetrate various types of packaging materials such as paper, cellophane, polyethylene, and polyvinyl. It is also applicable to the sterilization of plastic containers to be used for sterile medicaments, bandages, sponges, and almost all solid objects.

PAUL J. PIERPAOLI

DEIONIZING PLANTS AND PYROGENICITY OF LONDON TAP WATER

Deionizing Plants and Pyrogenicity of London Tap Water, Whittet, T. D., Pharm. J. 133:129 (Aug.) 1961. (Univ. of London, London, England).

Previous work on strongly basic anion exchange resins showed that they were capable of completely removing pyrogens from London tap water. The investigator has carried out experiments on deionized water from plants of various types in order to ascertain whether or not such plants always deliver pyrogen-free water when operated under usual conditions.

A series of tests was carried out using the two-bed, mixed-bed column, and mixed-bed cartridge type of plant. Samples of water removed from each of the three plants were tested under conditions which were as near as possible to those of its routine use and at intervals during the process from freshly regenerated to exhausted resins. The samples withdrawn from the plants were tested for resistance or specific conductivity and pyrogenicity by the B.P. method. Bacteriological tests of London tap water and of deionized water prepared from it were also carried out on incubated samples.

It was observed that two-bed and mixed-bed column type plants usually gave pyrogen-free water, whereas the cartridge type often gave water contaminated with pyrogens although of high chemical purity. The measurement of specific conductivity or resistance is useless to indicate the presence or absence of pyrogens. Passage of tap water through deionizing plants may result in a marked diminution of its bacterial content as well as removal of pyrogens. Results show that plants cannot always guarantee pyrogen free water, but are most efficient when used regularly and regenerated frequently.

PAUL J. PIERPAOLI

SURFACTANTS IN A HYDROPHILIC BASE

Study of Anionic and Cationic Surfactants in a Hydrophilic Ointment Base I, and II, Patel, K. C., Banker, G. S. and DeKay, H. G., J. Pharm. Sci. 50:294 (Apr.) 1961. (School of Pharmacy, Purdue University, West Lafayette, Ind.)

Part I. Sixty-two anionic and twenty-eight cationic surfactants were subjected to two screening procedures to determine which surfactants warranted a complete evaluation in the hydrophilic ointment formula. Following the preliminary screening, the remaining ten anionic and five cationic surfactants were evaluated for stability, spreadability, washability, consistency, and water loss in the hydrophilic ointment base. Both the type and concentration of the surfactant used affected the water-retention property of the respective bases. The ointment base prepared with a two percent concentration of the anionic surfactant, sodium lauryl ether sulfate, produced the most satisfactory hydrophilic ointment vehicle based on pharmaceutical elegance and compatibility with representative topical drugs.

AUTHOR'S SUMMARY

Part II. Five hydrophilic ointment bases prepared with one cationic and four anionic surfactants were studied for their medicament release characteristics using three *in*

vitro methods: (a) a radioactive isotope, (b) a bacteriological and (c) a physicochemical method. A modified physicochemical method has been developed to increase the sensitivity and the speed of the color zones produced per unit time. A comparative discussion of the three *in vitro* methods has been presented. The ointment sample prepared with two percent of the anionic surfactant, sodium lauryl ether sulfate, produced the most satisfactory hydrophilic ointment, based on both physical properties and medicament release. Increasing the concentration of surfactant retarded the release of medicaments in all of the ointment bases studied with all three *in vitro* methods. Excellent correlation of results between the three *in vitro* methods was obtained.

AUTHOR'S SUMMARY

VISCOSITY-STABILITY OF SOLUTIONS OF HYDROPHILIC POLYMERS

Viscosity-Stability of Aqueous Solutions of Certain Hydrophilic Polymers, Levy, G., J. Pharm. Sci. 50:429 (May) 1961. (The University of Buffalo, School of Pharmacy, Buffalo 14, N. Y.)

The viscosity-stability of sodium carboxymethylcellulose and sodium alginate, in aqueous solution, has been investigated. The "viscosity half-life" of sodium carboxymethylcellulose decreases with increasing average molecular weight and increases with concentration. The "viscosity half-life" of sodium alginate also decreases with increasing molecular weight, but appears to be independent of concentration in the concentration range studied. The stereochemical features of these polymers, which may serve to explain the concentration effect, are discussed. The viscosity-stability of sodium alginate increases with increasing calcium content. Methods for a meaningful comparative evaluation of the viscosity-stability characteristics of hydrophilic polymers are discussed.

AUTHOR'S SUMMARY

EVALUATION OF DRUG ABSORPTION

Urinary Excretion Kinetics for Evaluation of Drug Absorption IV, Studies with Tetracycline Absorption Enhancement Factors, O'Reilly, I. and Nelson, E., J. Pharm. Sci. 50:413 (May) 1961. (School of Pharmacy, University of California Medical Center, San Francisco 22.)

Absorption of plain tetracycline hydrochloride after oral ingestion by humans was compared to the absorption of this material when it was given with d-glucosamine hydrochloride and with citric acid. Its absorption was also compared to the absorption of tetracycline phosphate complex. Absorption evaluation was by means of excretion rate measurements. Tetracycline absorption was essentially the same from all preparations. This finding was in agreement with some findings previously reported and in conflict with others.

AUTHOR'S SUMMARY

DRUG RELEASE FROM SOLIDS

Investigation of Drug Release from Solids IV, Influence of Absorption on the Dissolution Rate, Wurster, D. E. and Polli, G. P., J. Pharm. Sci. 50:403(May) 1961. (University of Wisconsin, School of Pharmacy, Madison 6.)

The influence of an adsorbent on the dissolution rate of a slightly soluble acidic solid was investigated. Experimental data indicated that the adsorbent was capable of increasing the dissolution rate observed in water under conditions of a decreased concentration gradient (Nernst-Brunner film theory) to the maximum rate obtained when a constant concentration gradient was maintained. The approximate amount of adsorbent required to increase the slower dissolution rate to the maximum was calculated with the aid of adsorption isotherms.

AUTHOR'S SUMMARY

COLORIMETRIC DETERMINATION OF PHENYLEPHRINE

Colorimetric Determination of Phenylephrine Using 4-Aminoantipyrine, Hiskey, C. F. and Levin, N., J. Pharm. Sci. 50:393 (May) 1961. (Endo Laboratories, Richmond Hill 18, N. Y.)

A study of the coupling reaction between 4-aminoantipyrine and phenylephrine in alkaline ferricyanide solutions is reported herein. A number of important variables were studied to determine their effect on the kinetics and extent of the reaction. A procedure for the determination of phenylephrine in some pharmaceutical preparations is also included.

AUTHOR'S SUMMARY

DISSOLUTION AND ABSORPTION RATES OF ASPIRIN

Comparison of Dissolution and Absorption Rates of Different Commercial Aspirin Tablets, Levy, G., J. Pharm. Sci. 50:388 (May) 1961. (Biopharmaceutics Laboratory, University of Buffalo, School of Pharmacy, Buffalo, 14, N. Y.)

The adsorption rates of several types of commercial aspirin tablets have been determined by the urinary excretion method. The results indicate that the *in vivo* adsorption rate is proportional to *in vitro* dissolution rate determined by a method previously described (1). An explanation is offered for some of the apparently conflicting results obtained by different clinical investigators who have studied the absorption rates of different types of aspirin. Some important but often neglected variables related to the clinical evaluation of aspirin adsorption are discussed. It is proposed that the *U.S.P.* tablet disintegration test be replaced by a dissolution test.

AUTHOR'S SUMMARY

BIOSYNTHESIS OF STEROID NUCLEUS

Biosynthesis of Steroid Nucleus, Peric-Bozovic, M., Farm. Glas. 17:195-207 (June) 1961. (Institute of Chemistry and Biochemistry, Medical Faculty, Zagreb).

The steriods can now be considered as rearrangement products of squalene, a dihydrotriterpene, one of the terpenoid compounds which are built up in general from the isopentane units. The latter originate from C^2 fragments or activated acetic acid. The condensation of C^2-fragments leads finally to the steroid nucleus. The pathways of its biosynthesis are presented in this review.

AUTHOR'S SUMMARY

CURRENT LITERATURE

. . . also calling your attention to the following articles appearing in recent hospital and pharmaceutical journals

. . . . . .

ADMINISTRATION

—Dispensing, Packaging, Labeling and Storage

Davis, J. Mack, Jr.: Rubber Stamps Save Time, *Hosp. Management* 92:52 (Nov.) 1961.

—Policy

Heller, William: Drug Control on Nursing Division (As a Hospital Pharmacist Sees It), *Drug Topics 105*:19 (Oct. 9) 1961.

Bowles, Grover C., Jr.: Hospitals Should Reexamire Use of Sample Drugs, *Modern Hosp. 97*:134 (Sept.) 1961.

TEACHING ACTIVITIES

Anon.: How Hospital Rx Men Play an Expanding Role in Teaching Student and Graduate Nurses, *Am. Profess. Pharmacist 27*:50 (Oct.) 1961.

Sister Suzanne Marie: Teaching Pharmacology to Student Nurses, *Hosp. Progress 42*:112 (Oct.) 1961.

MANUFACTURING OR BULK COMPOUNDING

Fox, Sereck H.: The Hospital Pharmacist as Bulk Compounder, *Hosp. Topics 39*:55 (Oct.) 1961 .

GENERAL

Fischelis, Robert P.: Contemporary Hospital Pharmacy—Its Origin and Evolution as a Specialty (Part I), *Hospitals 35*:75 (Oct. 16) 1961.

POSITIONS
in hospital pharmacy

PERSONNEL PLACEMENT SERVICE

The Personnel Placement Service is operated without charge for the benefit of hospitals and pharmacist members of the American Pharmaceutical Association and the AMERICAN SOCIETY OF HOSPITAL PHARMACISTS. The ultimate purpose is the improvement of pharmaceutical services in hospitals, by more adequately fulfilling hospital pharmacy personnel needs and by locating positions which provide challenging opportunities for pharmacists who have indicated an interest in a hospital career.

By participating in the service, the hospital indicates a desire to achieve a pharmaceutical service which meets the *Minimum Standard for Pharmacies in Hospitals.* A description of the position should be submitted to the Division of Hospital Pharmacy on the forms provided. The hospital will receive applications directly from the applicant. The hospital agrees to reply to each application received and to notify the Division of Hospital Pharmacy when the position is filled.

The pharmacist, by participating, agrees to submit a Personnel Placement Service Information Form to the Division of Hospital Pharmacy. The applicant will then be notified of openings listed with the Service as they become available and can negotiate directly with the hospital if he is interested. It is agreed that the Division of Hospital Pharmacy will be notified as soon as a position is accepted.

A listing of positions open and wanted will be made regularly in the AMERICAN JOURNAL OF HOSPITAL PHARMACY without charge. Neither the name of the hospital offering the position nor the name of the applicant will be listed, except by code. All inquiries should be directed as shown above, including the code number.
Address all inquiries to

Division of Hospital Pharmacy
2215 Constitution Avenue, N. W.
Washington, 7, D. C.

positions open

STAFF PHARMACIST—400 bed general hospital in Iowa. Assist in compounding and dispensing pharmaceuticals to inpatients and clinic patients. Also other related duties. Must be registered. Forty hour week, liberal personnel policies. PO-320

STAFF PHARMACIST—900 bed general hospital located in Minnesota. Duties include filling prescriptions and some manufacturing. Must have B.S. and be registered. Forty hour week, liberal personnel policy. PO-318

ASST. CHIEF PHARMACIST—685 bed general hospital. Duties include inpatient and outpatient dispensing, assisting in purchasing, maintaining records, and furnishing information on medications. Must be registered or eligible for registration in Pennsylvania. Forty hour week, liberal personnel policies. PO-317

STAFF OR ASST. CHIEF PHARMACIST—200 bed general hospital located in Indiana. Duties include inpatient and outpatient dispensing, providing information to medical staff, assisting in bulk compounding and inventory control. Male preferred. Must be registered. Forty hour week, liberal personnel policies. PO-316

CHIEF PHARMACIST—65 bed NPA hospital. Duties include dispensing prescriptions for inpatient and outpatient service. Must have a degree in pharmacy and registration in Florida. Forty hour week, liberal personnel policy. PO-315

STAFF PHARMACIST—600 bed general teaching hospital. Duties include working in all areas of the pharmacy. Must have B. S. and be eligible for registration in Ohio. Forty hour week. PO-314

STAFF OR ASST. CHIEF PHARMACIST—300 bed general hospital located in Minnesota. Duties include filling orders for nursing stations and departments; also some bulk compounding. Must be registered and have several years hospital pharmacy experience. Forty hour week, liberal personnel policies. PO-313

STAFF PHARMACIST—175 bed general hospital located in the State of Washington. Must be registered. Forty hour week, liberal personnel policy. PO-312

DIRECTOR OF CENTRAL SERVICES—365 bed general hospital located in New Jersey. Duties include development and direction of a Division of Central Services encompassing Pharmacy Dept., central supply service, inhalation therapy, central equipment room, EKG, EEG, and storeroom. Must be registered with an M. S. degree and previous hospital supervisory experience. Forty hour week, liberal personnel policies. PO-311

ASST. CHIEF PHARMACIST—237 bed general hospital in West Virginia. Duties include assisting in maintaining inpatient and outpatient prescription services. May also assist in teaching student nurses. Must be registered. Forty hour week, liberal personnel policy. PO-309

STAFF PHARMACIST—518 bed general hospital located in New Jersey. Duties include dispensing and compounding drugs, furnishing information concerning medication to physicians and nurses. Must be registered. Forty hour week, liberal personnel policy. PO-309

ASST. CHIEF PHARMACIST—225 bed general hospital. Duties include compounding and dispensing drugs and medications for hospital inpatients and outpatients. Must be eligible for licensure in Hawaii. Forty hour week, liberal personnel polices. PO-307

STAFF PHARMACIST—425 bed general hospital located in Illinois. Duties include dispensing drugs. Must be registered. Forty hour week, liberal personnel policies. PO-306

ASST. CHIEF PHARMACIST—327 bed general hospital located in Western North Carolina. Duties include assisting in all operations of the pharmacy and assuming full responsibility in absence of chief pharmacist. Forty hour week, liberal personnel policy. PO-305

ASST. CHIEF PHARMACIST—450 bed general hospital. Duties include supervising Inpatient Dispensing Laboratory; ordering drugs, some sterile preparations and limited bulk compounding. Must have M.S. and registration in California. Forty hour week, liberal personnel policy. PO-304

STAFF PHARMACIST—1000 bed general hospital located in Iowa. Duties include inpatient and outpatient service. Must have B.S. but need not be registered. Can serve internship for board requirements prior to registration. Forty hour week, liberal personnel policies. PO-303

STAFF PHARMACISTS—300 bed general hospital located in California. Must be registered. Forty hour week, liberal personnel policies. PO-302

ASST. CHIEF PHARMACIST—295 bed general hospital located in New York. Must be registered. Forty hour week, liberal personnel policies. PO-301

ASST. CHIEF PHARMACIST—324 bed general hospital located in Ohio. Duties include supervising, compounding, filling inpatient and outpatient prescriptions, and advising physicians and nurses regarding new drugs. Forty hour week, liberal personnel policy. PO-300

STAFF PHARMACIST—180 bed general hospital located in California. Duties include filling prescriptions for inpatients and outpatients, floor supplies for nursing stations and assisting chief pharmacist. Forty hour week, liberal benefits. PO-299

ASST. CHIEF PHARMACIST—1200 bed general teaching hospital. Duties include drug procurement; receipt; prepackaging; compounding; issue and annual inventory of pharmaceuticals; maintaining records; supervising pharmacy function and administrative duties. Male required and eligible for New York registration. Forty hour week, extensive personnel policy. PO-298

CHIEF PHARMACIST—427 bed general hospital. Pharmacy staff consists of five pharmacists. Applicant must have M.S. degree and registration in Missouri. Forty hour week, vacation and sick leave. PO-292

STAFF PHARMACIST—280 bed general short-term hospital located in Texas. Duties include filling of inpatient and outpatient prescriptions, floor stock, and maintaining records. Must be registered. Forty hour week, liberal personnel policy. PO-279

STAFF PHARMACIST—300 bed general short-term hospital. Duties include inpatient and outpatient dispensing, bulk compounding and manufacturing, sterile preparations and control. Male preferred. Must have B.S. and be eligible for registration in Michigan. Forty hour week, liberal benefits. PO-278

STAFF OR ASST CHIEF PHARMACIST—300 bed hospital. Duties include compounding and dispensing medicines, assisting in purchasing, maintaining records, furnishing information on medications. Must have B.S. and be eligible for registration in Indiana. Female preferred with experience. Forty hour week, vacation, sick leave, excellent personnel policy. PO-276

ASST. CHIEF PHARMACIST—212 bed general hospital. Duties include filling stock orders for nursing stations and other related duties. Must be registered in Illinois. Female preferred. Forty hour week, liberal personnel policy. PO-271

ASST. CHIEF PHARMACIST—130 bed general hospital located in Louisiana. Duties include compounding and dispensing drugs, maintaining records, and assisting in purchasing and general management of the department. Forty hour week, vacation, hospitalization and sick leave. PO-270

ASST. CHIEF PHARMACIST—317 bed general hospital located in Delaware. Duties include assisting chief pharmacist in carrying out procedures and policies. Male preferred with internship, preferably M.S. degree. Forty hour week, vacation and liberal personnel policies. PO-254

STAFF AND ASST. CHIEF PHARMACISTS—600 bed general hospital located in suburb of Chicago. Filling patient prescriptions. Forty hour week, excellent personnel policies. PO-252

STAFF PHARMACIST—237 bed general hospital. Duties include filling patient drug orders, outpatient prescriptions and assisting chief pharmacist. B.S. degree and registration in Iowa required. Forty hour week, vacation and sick leave. PO-250

STAFF PHARMACIST—525 bed general hospital located in Ohio. Duties include filling prescriptions for patients, floor stock and clinic patients. Must be registered in Ohio. Forty hour week, vacation and personnel policies. PO-249

STAFF PHARMACIST—700 bed general hospital. Duties include dispensing drugs from the central and clinic pharmacies. Registration in Georgia required. Male or Female. Liberal personnel policies. PO-245

STAFF PHARMACIST—520 bed general private hospital. Duties include compounding and dispensing medications and preparations according to prescriptions. Female preferred. Must be registered or eligible for registration in Washington State. Forty hour week, vacation and other liberal benefits. PO-242

STAFF PHARMACIST—350 bed general hospital. Applicant will assume some supervisory responsibility. B.S. required. Must be registered or eligible for licensure in Ohio. Forty hour week, vacation, sick leave, holidays and group hospitalization. PO-235

CHIEF PHARMACIST—120 bed general hospital located in Kansas. Pharmacist will organize pharmacy department and assist in teaching pharmacology to student nurses. Must be registered or eligible for licensure. Forty-four hour week, vacation and other liberal benefits. PO-230

STAFF PHARMACIST—550 bed teaching hospital located in Virginia. No experience necessary. Female preferred. Forty hour week, vacation, and liberal benefits. PO-226

CHIEF PHARMACIST—Psychiatric hospital located in Ohio. Must be registered in Ohio. Forty hour week, vacation and retirement benefiits. PO-221

CHIEF PHARMACIST—264 bed general hospital located in Texas. Plans and directs pharmacy policies, compounds and dispenses medicines, purchases supplies and materials, maintains records, and prepares periodical reports. Must be eligible for or have M.S. degree. Forty hour week, vacation sick leave and insurance plan. PO-177

STAFF PHARMACIST—200 bed general hospital. Duties include compounding, dispensing and manufacturing. Applicant must have B.S. in Pharmacy and be registered in Connecticut. Recent graduate acceptable. Forty-four hour week, vacation, pension plan and hospitalization. PO-168

STAFF OR ASST. CHIEF PHARMACIST—150 bed general hospital located in New Mexico. Generous benefits. PO-134

positions wanted

STAFF OR ASST. CHIEF PHARMACIST—Male, Single. Obtained B.S. in 1960 at Duquesne University. Four years' hospital pharmacy experience. Prefers to locate in Western Pennsylvania or Eastern Ohio. Registered in Pennsylvania. PW-383

DIRECTOR OF PHARMACY—Male, married. M.S. in Pharmacy Administration obtained in 1959. Four years' hospital pharmacy experience. Prefers to locate in the East. Registered in New York. PW-382

CHIEF PHARMACIST—Male, Married. Pharm. D. degree received in 1957. Served hospital pharmacy internship. Five years' hospital pharmacy experience. Prefers to locate in California. Registered in California. PW-381

ASST. CHIEF OR CHIEF PHARMACIST—Male, Married. M.S. obtained in 1958. Served hospital pharmacy internship. Four years' hospital pharmacy experience. Prefers to locate in Colorado-Iowa area. Registered in Colorado and Iowa. PW-380

ASST. CHIEF OR CHIEF PHARMACIST—Male, Single. Obtained B.S. in 1956. Completed military obligations. Hospital pharmacy experience. Prefers to locate in the Northeast. Registered in Texas and New Jersey. PW-379

ASST. CHIEF PHARMACIST—Male, Single. B.S. in 1958. Will have completed military obligations in January, 1962. Hospital pharmacy experience. Prefers to locate in the Midwest, Northeast or Southwest. Registered in Connecticut. PW-378

STAFF OR ASST. CHIEF PHARMACIST—Female, Single. B.S. obtained at University of North Carolina School of Pharmacy. Served hospital pharmacy internship. Prefers to locate in Virginia. Registered in North Carolina. PW-377

STAFF OR ASST. CHIEF PHARMACIST—Male, Married. B.S. obtained at University of Connecticut in 1957. Seventeen months' hospital pharmacy experience. Prefers to locate in the New England States, preferably Connecticut or Southern Massachusetts. Registered in Delaware and Connecticut. PW-375

STAFF PHARMACIST—Male, Married. Presently working towards M.S. degree at Kansas University. Four years' hospital pharmacy experience. Prefers to locate in the West or Alaska. Registered in Kansas and Colorado. PW-374

STAFF OR CHIEF PHARMACIST—Female, Single. B.S. and Ph.C. degrees. Eight years' hospital pharmacy experience. Served hospital pharmacy internship. Prefers to locate in Florida. Registered in Florida and Puerto Rico. PW-373

STAFF PHARMACIST—Male, Single. B.S. obtained in 1955 at Rutgers' University, College of Pharmacy. Two years' hospital pharmacy experience in U. S. Army stationed in France. Prefers to locate in New Jersey. Registered in New Jersey and New York. PW-372

PHARMACY DIRECTOR—Male, Married. B.S. obtained in 1959 at University of Texas. Prefers to locate in Texas. Registered in Texas. PW-371

ASST. CHIEF PHARMACIST—Male, Single. Pharm. D. Hospital pharmacy experience; extensive experience in manufacturing pharmaceuticals. Prefers to locate in the Philadelphia, Pennsylvania area. Registered in Pennsylvania. PW-370

CHIEF PHARMACIST—Male, Married. B.S. Served hospital pharmacy internship. Also has teaching experience. Will locate anywhere. Registered in Indiana. PW-369

ASST. CHIEF PHARMACIST—Male, Married. B.S. obtained at University of Kansas in 1960. Hospital pharmacy experience, also experience in research. Will locate anywhere. Registered in Kansas. PW-368

STAFF OR ASST. CHIEF PHARMACIST—Male, Married. B.S. at University of Colorado in 1957. Will locate anywhere. Registered in Illinois. PW-367

CHIEF PHARMACIST—Male, Married. B.S. Nine years' hospital pharmacy experience. Will locate anywhere. Registered in Missouri and Illinois. PW-366

STAFF OR ASST. CHIEF PHARMACIST—Female, Single. B.S. One year's hospital pharmacy experience. Prefers to locate in the East or Texas. Registered in Iowa. PW-365

STAFF PHARMACIST—Female, Single. B.S. Served five months' hospital pharmacy internship. Will locate anywhere, preferably in the U. S. Registered in the Province of Alberta, Canada. PW-364

ASST. CHIEF OR CHIEF PHARMACIST—Male, Single. Ph.G. Six years' hospital pharmacy experience. Prefers to locate in Maryland. Registered in Maryland, District of Columbia, and Florida. PW-363

ASST. CHIEF OR CHIEF PHARMACIST—Male, Married. Obtained B.S. in 1948. Thirteen years' hospital pharmacy experience. Prefers to locate in the Midwest. Registered in Minnesota and Illinois. PW-359

CHIEF PHARMACIST—Male, Married. Obtained B.S. in 1952 at Medical College of Virginia. Three years' hospital pharmacy experience. Prefers to locate in the Southeast. Registered in Virginia. PW-354

STAFF PHARMACIST—Male, Single. Obtained B.S. in 1951 at Detroit Institute of Technology. Hospital pharmacy experience. Prefers to locate in the Midwest. Registered in Michigan. PW-352

ASST. CHIEF OR CHIEF PHARMACIST—Male, Married. Obtained B.S. in 1953. Seven years' hospital pharmacy experience. Prefers to locate in the West or Southwest. Registered in New York. PW-350

ASST. CHIEF OR CHIEF PHARMACIST—Male, Married. Obtained B.S. in 1943. Hospital pharmacy experience. Prefers to locate in the South. Registered in Florida, Georgia and North Carolina. PW-345

CHIEF PHARMACIST—Male, Married. B.S. Served hospital pharmacy internship. Prefers to locate in California. Registered in California, Massachusetts and Connecticut. PW-344

CHIEF PHARMACIST—Male, Married. Obtained B.S. in 1954. Seven years' hospital pharmacy experience. Prefers to locate in the Northeast. Registered in Connecticut and Pennsylvania. PW-341

STAFF OR CHIEF PHARMACIST—Male, Married. Obtained B.S. and M.S. in 1950. Eleven years' hospital pharmacy experience. Prefers to locate outside continental U. S. Registered in Nebraska and Illinois. PW-340

ASST. CHIEF PHARMACIST—Female, Married. Canadian Citizen. Five years' hospital pharmacy experience. Prefers to work in an American hospital overseas. Registered in Canada. PW-338

CHIEF PHARMACIST—Male, Married. Obtained B.S. in 1952. Hospital pharmacy experience. Prefers to locate in the West, Northwest, Kentucky or Washington, D.C. Registered in Kentucky. PW-337

ASST. CHIEF OR CHIEF PHARMACIST—Male, Married. Obtained B.S. in 1954. Three years' hospital pharmacy experience. Prefers to locate in the West or East. Registered in Pennsylvania. PW-333

ASST. CHIEF OR CHIEF PHARMACIST—Male, Married. Obtained B.S. in 1960. Hospital pharmacy experience. Prefers to locate on the East Coast. Registered in Florida and Georgia. PW-331

CHIEF PHARMACIST—Male, Married. B.S. Hospital pharmacy experience. Will locate anywhere. Registered in New Jersey and Pennsylvania. PW-326

CHIEF PHARMACIST—Female, Single. Obtained B.S. in 1956. Five years' hospital pharmacy experience. Prefers to locate in the East. Registered in Florida and Georgia. PW-320

ASSOC. DIRECTOR OR DIRECTOR OF PHARMACY SERVICE—Male, Married. Obtained M.S. in 1960 at University of Michigan. Teaching and hospital pharmacy experience. Served hospital pharmacy internship. Will locate anywhere. Registered in Pennsylvania. PW-319

ASST. CHIEF OR CHIEF PHARMACIST—Female, Single. B.S. Five years' hospital pharmacy experience. Prefers to locate in the Midwest or East. Registered in Illinois and Ohio. PW-297

CHIEF PHARMACIST—Male, Married. B.S. obtained at the Philadelphia College of Pharmacy and Science in 1951. Nine years' hospital pharmacy experience. Prefers to locate in the North, Midwest or West. Registered in Pennsylvania and Delaware. PW-294

ASST. CHIEF OR CHIEF PHARACIST—Male, Married. Obtained M.S. at Philadelphia College of Pharmacy. Served hospital pharmacy internship. Three years' hospital pharmacy experience. Prefers to locate in Connecticut. Registered in Connecticut and Pennsylvania. PW-290

ASST. CHIEF OR CHIEF PHARACIST—Male, Married. B.S. obtained at University of Illinois. Extensive hospital pharmacy experience. Prefers to locate in the East or Midwest. Registered in Illinois. PW-287

ASST. CHIEF OR CHIEF PHARMACIST—Female, Single. B.S. obtained in 1956 at University of Wyoming. Working towards M.S. at the University of Maryland. Served hospital pharmacy internship. Hospital pharmacy experience. Prefers to locate in the West. Registered in Wyoming. PW-276

ASST. CHIEF OR CHIEF PHARMACIST—Male, Single. M.S. obtained in 1958 at University of Texas. Hospital pharmacy experience. Prefers to locate in the Southwest. Registered in Kansas and Texas. PW-270

ASST. CHIEF OR CHIEF PHARMACIST—Male, Married. B.S. received at Detroit Institute of Technology in 1950. Four years' hospital pharmacy experience. Prefers to locate in Michigan. Registered in Michigan. PW-224

STAFF PHARMACIST—Female, Single. B.S. Seven years' hospital pharmacy experience. Southwest section of country preferred. Registered in Alabama and Georgia. PW-199

CHIEF PHARMACIST—Male, Married. Graduate of St. Johns University College of Pharmacy. Extensive experience as chief pharmacist and purchasing agent. Prefers to locate in New York or New Jersey. Registered in New York and New Jersey. PW-144

DRUGS FOR SCIENCE PROJECTS IN HIGH SCHOOLS

► PHARMACISTS MAY FURNISH prescription drugs for Science projects (such as science fairs) conducted in high schools under regulation 1.106 (m) of the federal Food, Drug and Cosmetic Act.

This can be made an important means (1) of informing the pupils and teachers of the science-oriented nature of the Pharmacy curriculum, (2) of showing Pharmacy's place on the health team, (3) or acquainting the public with the variety of opportunities in the profession, and (4) of interesting more qualified youngsters in the study of Pharmacy.

Follow these rules (as a minimum) in dispensing the drugs: (1) Dispense only to the teacher-sponsor; (2) make an accurate record of a) name and location of the teacher, b) date of transaction, and c) identity and amount of drugs dispensed. It might be well to note the nature of the project with the other information. The Pharmacist is responsible for determining that the request is bona fide and that only a reasonable amount of the drug is dispensed.

Please note that this information does *not* refer to drugs controlled by the Harrison Narcotic Act. A teacher would have to qualify as a Class VI licensee to obtain such drugs.

Let us make every effort to cooperate in this work with the pupils, parents and teachers, and thereby increase our professional stature.

Outpatient Prescriptions

"Outpatient dispensing" was the subject of one panel session at a recent hospital pharmacy seminar in the Northwest. Some of the panelists and many in the audience came from towns where hospitals are small and where there might be comparatively few retail pharmacies also. Some of the hospitals were community sponsored.

The questions inevitably arose: What do you do about "walk-in" or "off the street" prescriptions. The hospital pharmacists had a feeling of oneness with the community pharmacist, who, as they pointed out, often supported the hospital. All stated that their outpatient prescription service was confined to employee prescriptions and an occasional going home patient for whom it would be inconvenient to stop at a retail pharmacy.

Whatever the experience elsewhere, in small towns in Oregon and Southwestern Washington, the hospital pharmacists avowedly respect the position of the retail pharmacist in the community. Those at the seminar said that they received good cooperation and understanding regarding the hospital practice from their colleagues in the community. One pharmacist had engaged the local pharmacists to do relief work in the hospital and this, it was stated, provided a fine opportunity for the community pharmacist to observe the workings of the pharmacy department in the hospital.

The hospital in the small town has some special public relations problems. Community business people rely upon outpatient prescription business to support their enterprise and to sustain their service contributions to the community. Hospital administrators and pharmacists, sympathetic to this position, can ease friction by discouraging outpatient prescription business that otherwise would go into retail pharmacies.

That this general feeling is concurred in by professional hospital pharmacists, is gratifying to see.

E. Byron Smith

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